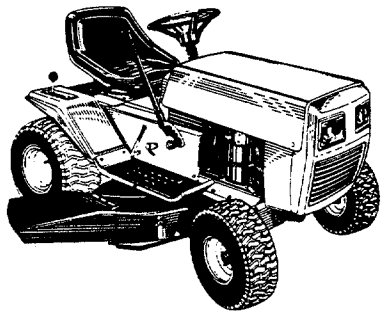
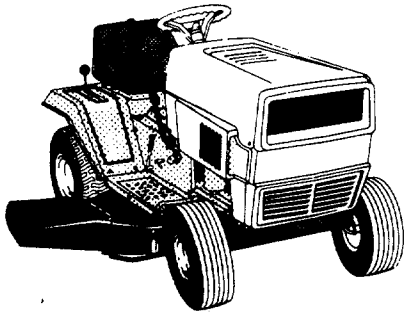
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OWNER'S GUIDE

ASSEMBLY • OPERATION • MAINTENANCE • PARTS







TRANSMATIC TWIN CYLINDER FRONT ENGINE LAWN TRACTORS

OIL CAPACITY 3.5 PINTS

Model Numbers
130-660-000
thru
130-689-000

Important: Read Safety Rules and Instructions Carefully

PRINTED IN U.S.A.

FORM NO. 770-7113E

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Dear Customer,

So often throughout the year we are all in a rush to meet our daily obligations.

However, we at MTD Products Inc are taking a quick moment out to say...

"Thank you for your business."

Sincerely,
MTD PRODUCTS INC

INSTRUCTIONS GIVEN WITH THIS SYMBOL ARE FOR PERSONAL SAFETY. BE SURE TO FOLLOW THEM.

WARNING: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator.

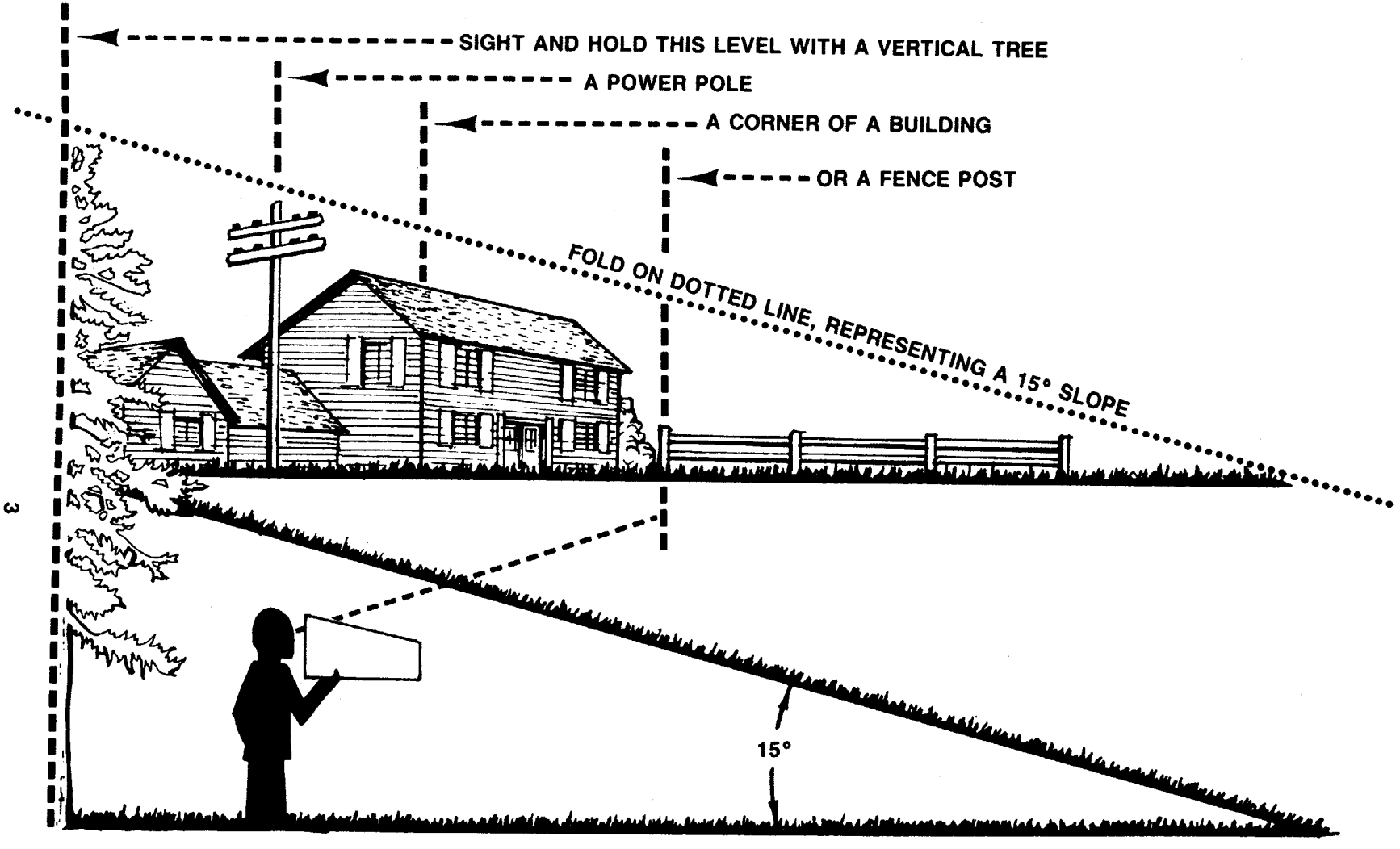
In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the customer service department of MTD PRODUCTS INC.

Cut Alo ...is Line

SLOPE GAUGE

(Keep this sheet in a safe place for future reference.)

USE THIS SHEET AS A GUIDE TO DETERMINE SLOPES WHERE YOU MAY NOT OPERATE SAFELY.



WARNING

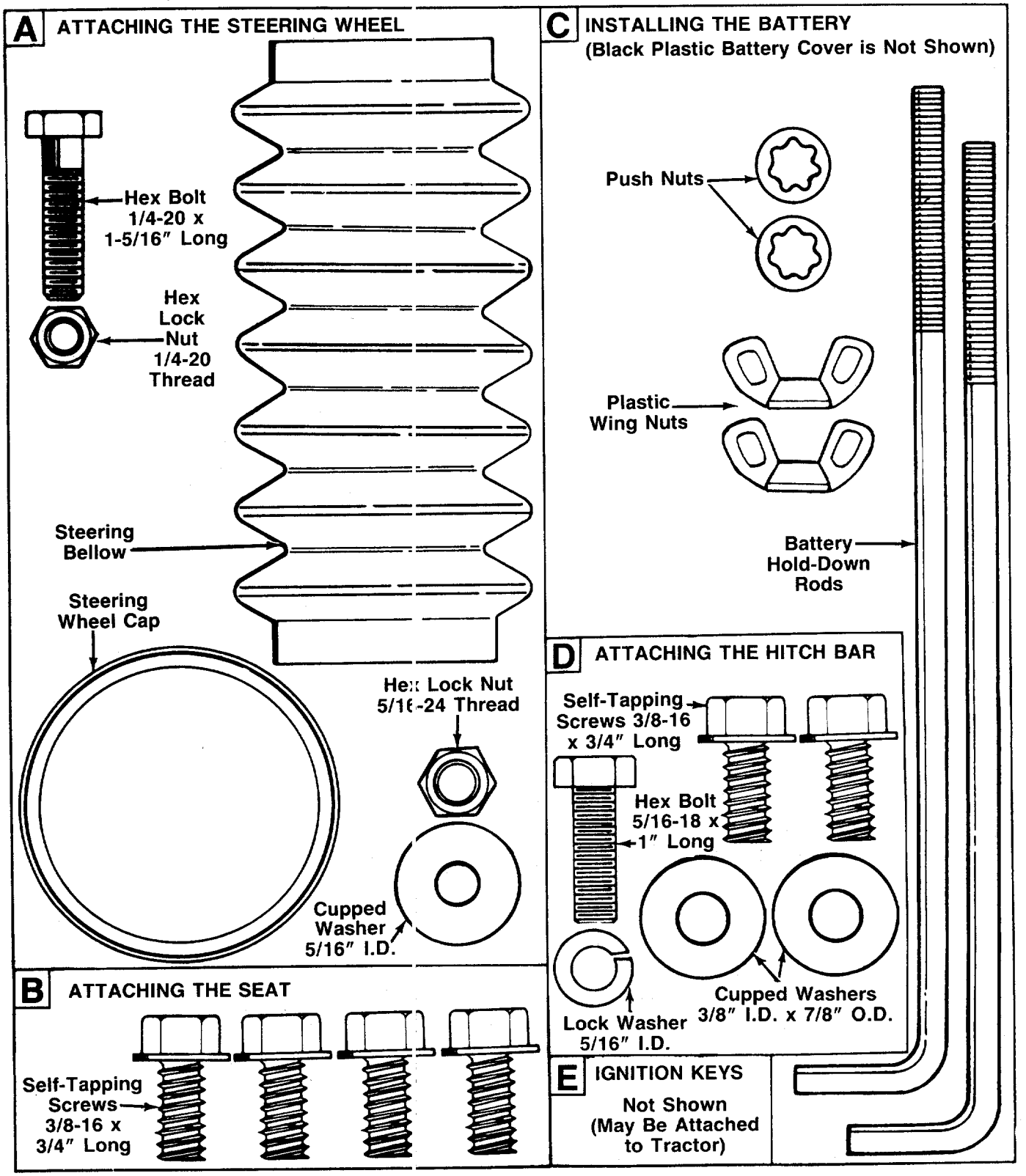
Do not mow on inclines with a slope in excess of 15 degrees (a rise of approximately 2½ feet every 10 feet). A riding mower could overturn and cause serious injury. If operating a walk-behind mower on such a slope, it is extremely difficult to maintain your footing and you could slip, resulting in serious injury.

Operate RIDING mowers up and down slopes, never across the face of slopes.
Operate WALK-BEHIND mowers across the face of slopes, never up and down slopes.

CONTENTS OF HARDWARE PACK

Remove this sheet from your owner's manual and lay the hardware on the illustration for identification purposes. After assembly, keep the Slope Gauge which is on the reverse side of this sheet for future use.

(Hardware pack may contain extra items which are not used on your unit.)



0 1 2 3
INCHES

Cut Along This Line

IMPORTANT

RULES FOR SAFE OPERATION

THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR UNIT. FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY. WHEN YOU SEE THIS SYMBOL— **HEED ITS WARNING.**

DANGER

Your unit was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. If you violate any of these rules, you may cause serious injury to yourself or others.

1. READ THIS OWNER'S MANUAL carefully in its entirety before attempting to assemble or operate this unit. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. This unit is a precision piece of power equipment, not a plaything. Therefore exercise extreme caution at all times.
3. Know the controls and how to stop the machine quickly.
4. Do not allow children to operate vehicle. Do not allow adults to operate it without proper instruction. Only persons well acquainted with these rules of safe operation should be allowed to use your mower.
5. Wear sturdy, rough-soled work shoes and close-fitting slacks and shirts to avoid entanglement in the moving parts. Never operate a unit in bare feet, sandals, or sneakers.
6. To prevent injury, do not carry passengers or give rides. Keep children, pets and bystanders out of the area while mowing. Only the operator should ride on the unit and only ride in the seat.
7. Check overhead clearance carefully before driving under power lines, guy wires, bridges or low hanging tree branches, before entering or leaving buildings, or in any other situation where the operator may be struck or pulled from the unit, which could result in serious injury.
8. To maintain control of the unit and reduce the possibility of upset or collision, operate the tractor smoothly. Avoid erratic operation and excessive speed.
9. Keep the area of operation clear of all persons, particularly small children and pets. Stop engine when they are in the vicinity of your mower. Although the area of operation should be completely cleared of foreign objects, a small object may have been overlooked and could be accidently thrown by the mower in any direction and cause injury to you or a bystander.
10. Always wear safety glasses or eye shields during operation or while performing an adjustment or repair, to protect eyes from foreign objects that may be thrown from the machine in any direction.
11. Stop the blade(s) when crossing gravel drives, walks or roads.
12. Disengage all attachment clutches and shift into neutral before attempting to start engine.
13. Before leaving the operator's position, disengage blade(s), place shift lever in neutral, engage parking brake, shut engine off and remove key.
14. Do not put hands or feet near or under rotating parts. Keep clear of the discharge opening at all times as the rotating blade(s) can cause injury.
15. Disengage power to attachment(s) and stop engine before making any repairs or adjustments. Disconnect the spark plug wire and keep the wire away from the plug to prevent accidental starting.
16. Before attempting to unclog the mower or discharge chute, stop the engine. The mower blade(s) may continue to rotate for a few seconds after the engine is shut off. Therefore, be sure the blade(s) have stopped completely. Disconnect the spark plug wire and keep the wire away from the plug to prevent accidental starting.
17. Disengage power to attachment(s) when transporting or not in use.
18. For your safety, use the slope gauge included as part of this manual to measure slopes before operating this unit on a sloped or hilly area. If the slope is greater than 15° as shown on the slope gauge, do not operate this unit on that area or serious injury could result.
19. Do not stop or start suddenly when going uphill or downhill. Mow up and down face of steep slopes; never across the face. Use extreme caution if it is necessary to drive the tractor up an incline or back the tractor down an incline because the front of the tractor could lift and rapidly flip over backward which could cause serious injury.
20. Reduce speed on slopes and in sharp turns to prevent tipping or loss of control. Always keep the tractor in low gear when going down steep hills to take advantage of engine braking action. Choose a low enough gear so that you will not have to stop or shift while on the slope.
21. Stay alert for holes in terrain and other hidden hazards which may cause the unit to tip over.
22. Use care when pulling loads or using heavy equipment.
 A. Use only approved drawbar hitch points.
 B. Limit loads to those you can safely control.
 C. Do not turn sharply. Use care when backing.
 D. Use counterweight(s) or wheel weights when suggested in owner's manual.
23. Watch out for traffic when crossing or near roadways.
24. When using any attachments, never direct discharge of material toward bystanders nor allow anyone near vehicle while in operation.
25. Handle gasoline with care. It is highly flammable.
 A. Use approved gasoline container.
 B. Never remove cap or add gasoline to a running or hot engine or fill fuel tank indoors. Wipe up spilled gasoline. Always use original type vented cap.
 C. Open doors if engine is run in garage. Exhaust fumes are dangerous. Do not run engine indoors.
26. Never store the machine with fuel in the fuel tank inside a building where ignition sources are present, such as hot water and space heaters, clothes dryers, and the like. Allow the engine to cool before storing in any enclosure.
27. To reduce fire hazard, keep engine and cutting deck free of grass, leaves or excessive grease.
28. Keep the vehicle and attachments in good operating condition, and keep safety devices in place. Use guards as instructed in operator's manual.
29. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
30. The vehicle and attachments should be stopped and inspected for damage after striking a foreign object. The damage should be repaired before restarting and operating the equipment.
31. Do not change the engine governor settings or overspeed the engine.

Rules for Safe Operation (continued)

32. When using the vehicle with mower, proceed as follows:
 (1) Mow only in daylight or in good artificial light.
 (2) Never make a cutting height adjustment while engine is running if operator must dismount to do so.
 (3) Shut the engine off and wait until the blade comes to a complete stop before removing the grass catcher.
 (4) Check blade mounting bolts for proper tightness at frequent intervals.
33. Check grass catcher bags frequently for wear or deterioration. For safety protection, replace only with new bag meeting original equipment specifications.
34. Look behind to make sure the area is clear before placing the transmission in reverse and continue looking behind while backing up. Disengage blades before shifting into reverse and backing up.
35. This unit should not be driven up a ramp onto a trailer or truck under power, because the unit could tip over, causing serious personal injury. The unit must be pushed manually to load properly.
36. Check brake operation frequently. Adjust and service according to brake adjustment instructions in this manual.

ASSEMBLY

IMPORTANT: This unit is shipped WITHOUT GASOLINE or OIL; however, a small amount of oil may be present from the factory. Do not overfill. After assembly, service engine with gasoline and oil as instructed in the separate engine manual packed with your unit.

NOTE: Reference to right or left hand side of the unit is observed from the driver's seat, facing forward.

OPTIONAL REAR BAGGING KIT:

Two mounting brackets and hardware are included in a separate bag for use with the optional rear bagging kit, stock number 190-063. Keep these parts in a safe place for future use.

UNPACKING

1. Remove the lawn tractor from the carton as follows. Open the top flaps. Remove all loose parts and carton inserts. Cut the front corners of the carton. Make certain brake is released, and push the unit out of the carton.
2. Remove page four from this manual and lay the contents of the hardware pack on the illustration for identification.

BATTERY INFORMATION



WARNING

A. Battery acid must be handled with great care as contact with it can burn and blister the skin. It is also advisable to wear protective clothing (goggles, rubber gloves and apron) when working with it.*

B. Should battery acid accidentally splatter into the eyes or onto the face, rinse the affected area immediately with clean cold water. If there is any further discomfort, seek prompt medical attention.

C. If acid spills on clothing, first dilute it with clean water, then neutralize with a solution of ammonia/water or baking soda/water.

D. Since battery acid is corrosive, do not pour it into any sink or drain. Before discarding empty electrolyte containers, rinse them with a neutralizing solution.

E. NEVER connect or disconnect charger clips to battery while charger is turned on as it can cause sparks.

F. Keep all lighted materials (cigarettes, matches, lighters) away from the battery as the hydrogen gas generated during charging can be combustible.

G. As a further precaution, only charge the battery in a well-ventilated area.

***Always shield eyes, protect skin and clothing when working near batteries.**

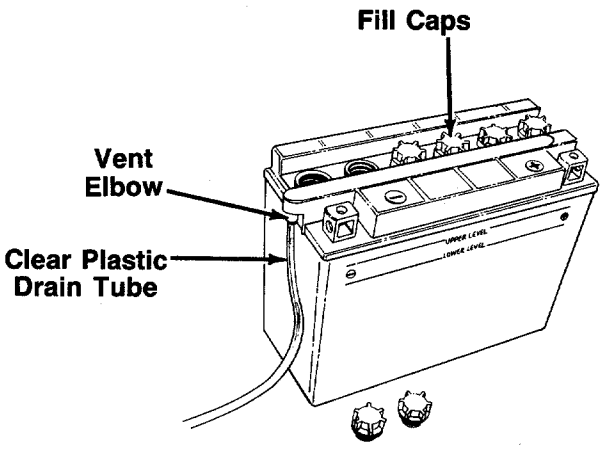


FIGURE 1.

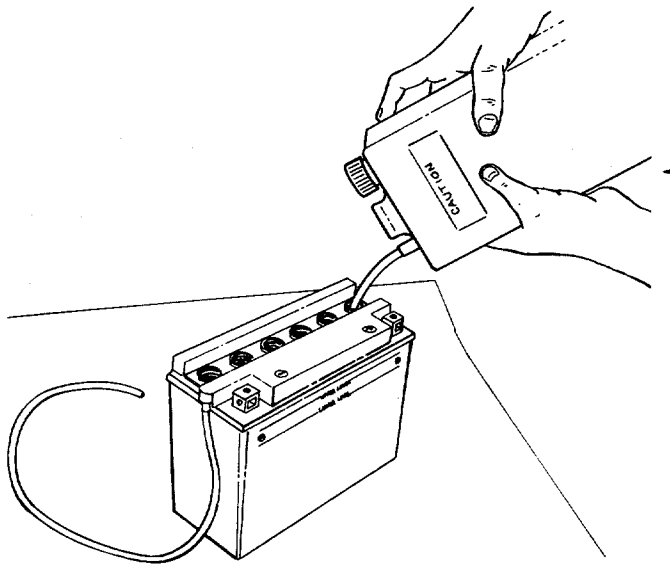


FIGURE 2.

DANGER

Battery contains sulfuric acid. Refer to warning on page 6. Antidote: EXTERNAL—Flush with water. INTERNAL—Drink large quantities of water or milk. Follow with milk of magnesia, beaten eggs or vegetable oil. Call physician immediately. EYES: Flush with cool water for at least 15 minutes, then get prompt medical attention.

Since batteries produce explosive gases, keep all lighted materials (cigarettes, lighters, matches, etc.) away. Be sure to charge battery only in well-ventilated areas. Make certain venting path of battery (drain tube) is always open.

KEEP BATTERIES
OUT OF THE REACH OF CHILDREN!

ACTIVATING THE BATTERY

Do not activate battery (fill with battery acid) until battery is actually placed in service. Be certain to read previous warnings before activating the battery.

1. Open the battery pack. Be careful not to puncture the box. It contains the battery with a long plastic tube attached, battery fluid (acid) in a plastic container, one short plastic tube and one hardware pack (two hex bolts and nuts).
2. Place the battery on a table or workbench. Make certain the long plastic drain tube is in place on the vent elbow.
3. Remove the six fill caps from the top of the battery. See figure 1.
4. Place the battery fluid container on the table or workbench. Carefully cut off tip of the spout and attach the short plastic tube provided. Do not squeeze the container when cutting tip.
5. Fill each battery cell slowly and carefully to the UPPER LEVEL line marked on battery. See figure 2. Use caution as the acid level will rise rapidly after the bottom of the cell is filled.
6. Allow battery to stand for 30 minutes with the fill caps removed, while the plates absorb acid.
7. If acid level has fallen after the 30 minute standing period, refill each cell with battery acid to the UPPER LEVEL line on battery. Replace the fill caps.
8. Before discarding the empty container, neutralize any residue with baking soda and rinse container with water. Puncture container several times before discarding.
9. Charge the battery after the 30 minute standing period. SLOW CHARGE THE BATTERY (DO NOT FAST CHARGE) at a maximum bench rate of 2 amperes until the specific gravity reading is 1.265. Charge for a minimum of 3 hours and a maximum of 5 hours.

NOTE: This engine is equipped with an alternator. The current for the battery charger alternator is unregulated. During normal operation, it is only necessary to charge the battery:

1. When it is activated for the first time.
2. Before winter storage.
3. Before using the lawn tractor after winter storage.

NOTE: After battery has been charged, add only distilled water. Do not add acid.

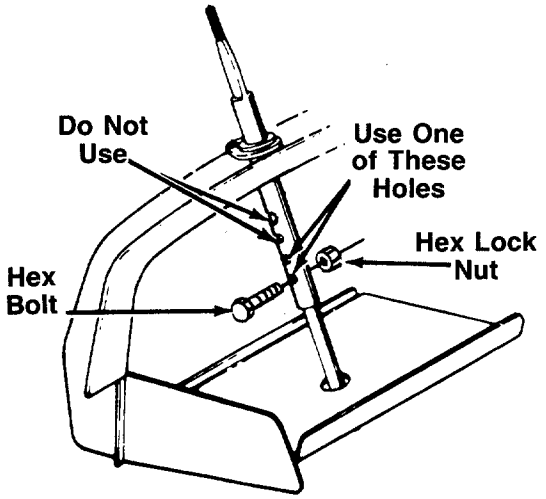


FIGURE 3.

ATTACHING THE STEERING WHEEL (Hardware A)

1. Open the hood of the lawn tractor by lifting up on both sides of the hood.
2. For shipping purposes, the upper steering shaft is pushed all the way down over the lower steering shaft. Pull the upper steering shaft up. The holes in the shaft provide steering wheel height adjustment. When securing the two halves of the steering shaft, select one of the two lower holes in the upper shaft as shown. **Do not** use the two upper holes. Secure with hex bolt and hex lock nut. See figure 3.

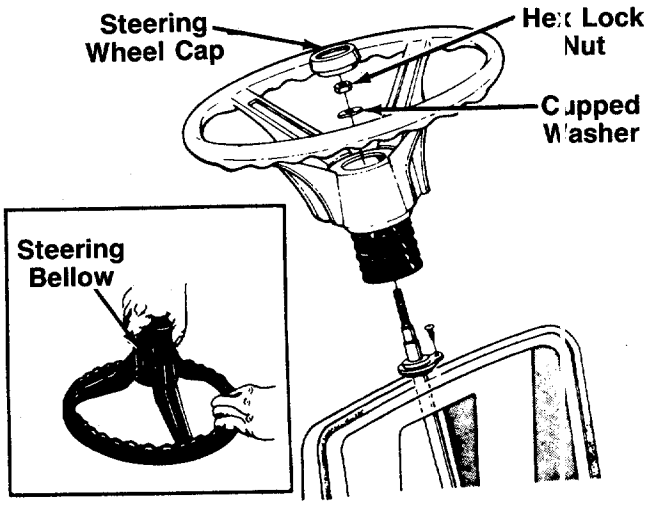


FIGURE 4.

3. Attach one end of steering bellow to the steering wheel as shown in figure 4, inset.
4. Position the front wheels of the tractor so they are pointing straight forward.
5. Place the steering wheel and steering bellow over the steering shaft, positioning steering wheel as desired.
6. Place the washer with the cupped side down over the steering shaft. Secure with 5/16" hex lock nut. See figure 4.
7. Place the steering wheel cap over the center of the steering wheel and seat it with your hand.

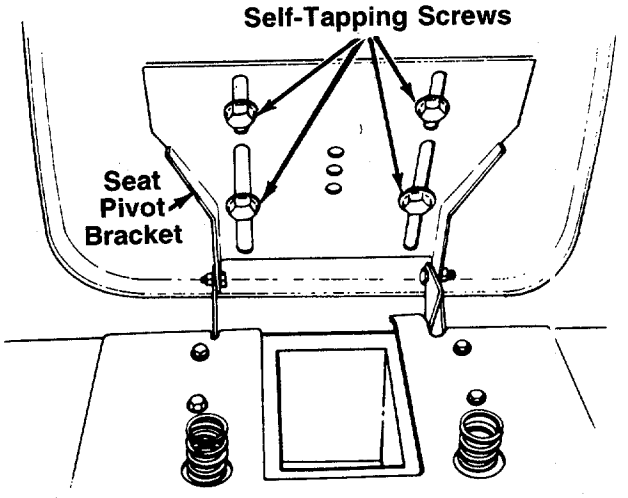


FIGURE 5.

ATTACHING THE SEAT (Hardware B)

Place the seat in position against the seat pivot bracket, lining up the slotted holes in the pivot bracket with the holes in the seat. Select desired position for the seat, and secure with self-tapping screws. See figure 5.

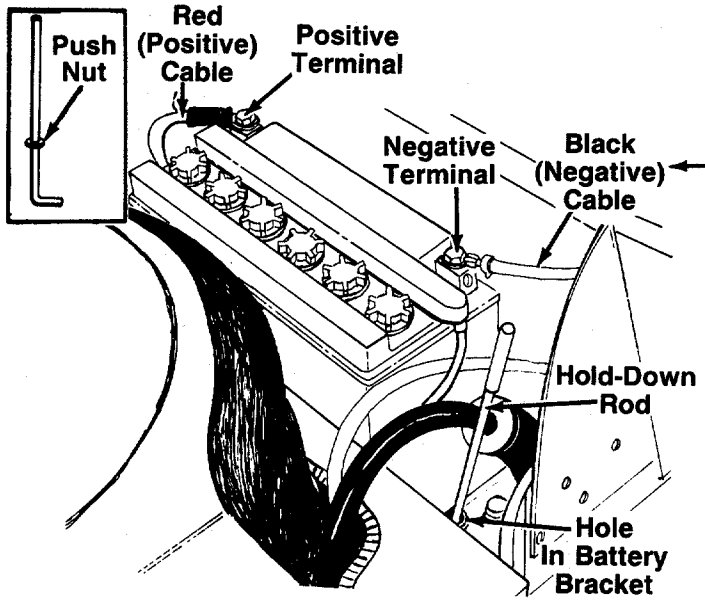


FIGURE 6.

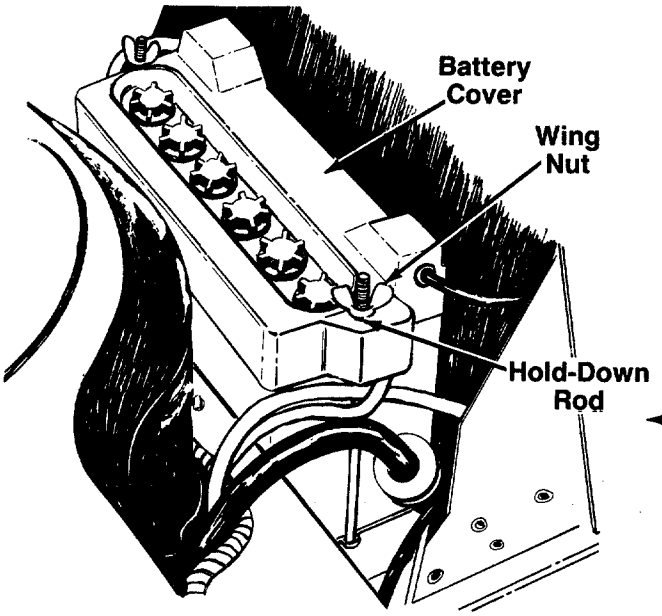


FIGURE 7.

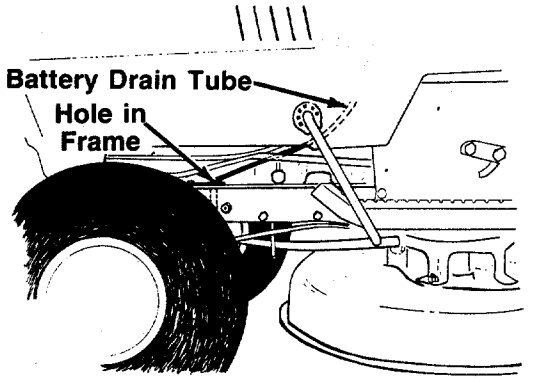


FIGURE 8.

INSTALLING THE BATTERY (Hardware C)

1. Open the hood of the lawn tractor by lifting up on both sides of the hood.
2. Attach one push nut to each battery hold-down rod. See figure 6, inset. Hook one hold-down rod into the holes in the battery plate which will be on each end of the battery. Slide the push nut down the rod, against the battery plate.
3. Place the battery in the lawn tractor so that the positive terminal is facing the right side of the unit. See figure 6.

NOTE: *Right and left hand sides of the unit are determined from the operating position, facing forward.*

4. Slide the hex nut (provided with battery hardware) into the positive (+) terminal. Place the positive cable on the positive terminal. Secure with bolt provided. See figure 6.
5. Slide the hex nut (provided with battery hardware) into the negative (–) terminal. Place the negative cable on the negative terminal. Secure with bolt provided.
6. Place the black plastic battery cover in position over the hold-down rods. Secure with wing nuts. See figure 7.
7. Route the battery drain tube down beside the engine, then forward to the hole in the frame shown in figure 8. Insert end of drain tube through the hole in the frame.
8. Trim end of drain tube if more than 1 to 2 inches extend through the frame.

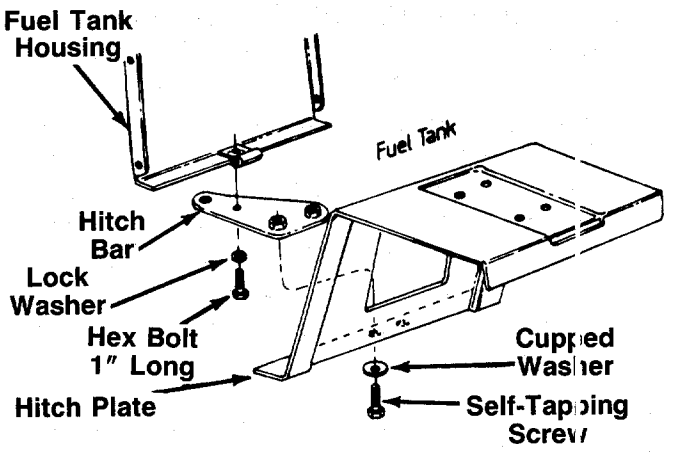


FIGURE 9.

ATTACHING THE HITCH BAR (Hardware D)

1. Place the hitch bar (weld nuts up) above the edge of the hitch plate on the tractor. See figure 9. Secure with two 3/4" long self-tapping screws and cupped washers (cupped side of washers go against the hitch plate).
2. Attach the hitch bar to the speed nut on the edge of the fuel tank housing using hex bolt 1" long and lock washer.

ATTACHING THE CHUTE DEFLECTOR

If your unit has been shipped without the chute deflector assembled, follow the instructions in the separate deck manual packed with your unit.

WARNING: Do not operate your unit unless the chute deflector has been properly installed.

CONTROLS

THROTTLE CONTROL

The throttle control is used to regulate the engine speed. To get maximum efficiency from cutting, the throttle should be in the FAST position when operating the mower. See figure 10.

CHOKE CONTROL

The choke control is located on the dashboard and is operated manually. Details for the choke operation are covered in the separate engine manual packed with your unit. See figure 10.

SHIFT LEVER

The shift lever is located in the center of the console and has three positions, FORWARD, NEUTRAL and REVERSE. See figure 10. The clutch-brake pedal must be depressed and the lawn tractor must not be moving when shifting gears. Do not force the shift lever. Release the clutch-brake pedal slightly to line up the shifting collar in the transmission. Then try to shift gears.

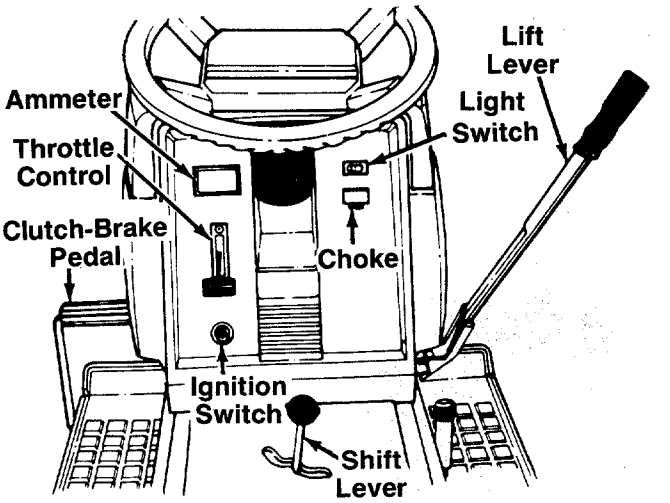


FIGURE 10.

SPEED CONTROL LEVER

The speed control lever is located on the right fender. It allows you to regulate the ground speed of the lawn tractor. See figure 11. To select the ground speed, depress clutch pedal. Push speed control lever outward and move backward to slow lawn tractor, move forward to increase speed. When desired speed has been obtained, release lever in that position. Whenever clutch is engaged, unit will automatically go to the pre-set speed.

IGNITION SWITCH

Turn the key to the START position to start the engine. When the engine is running, let the key return to the ON position. To stop the engine, turn the key to the left to the OFF position and remove it to prevent accidental starting. See figure 10.

LIGHT SWITCH

Push the light switch to turn on the lights. The lights will only operate when the engine is running. See figure 10.

AMMETER

The ammeter registers the rate of battery charge or discharge. The ammeter will register on the discharging side when starting the engine. It should register on the opposite side (charging) when the engine is running in the fast position until the battery is completely charged. With a fully charged battery or with the engine idling, the ammeter will not show a charge. See figure 10.

CLUTCH-BRAKE PEDAL

The clutch-brake pedal is located on the left side of the lawn tractor. Depressing the clutch-brake pedal part way disengages the clutch. Pressing the pedal all the way down disengages the clutch and engages the disc brake. See figure 10.

NOTE: *The clutch-brake pedal must be depressed to start the engine.*

PARKING BRAKE

The speed control lever is used to set the parking brake. To set the parking brake, depress the clutch-brake pedal. Press the speed control lever outward and all the way to the rear of the unit. Release the speed control lever and the clutch-brake pedal.

To release the parking brake, depress the clutch-brake pedal, press the speed control lever outward and move to desired position. Release the speed control lever and the clutch-brake pedal.

NOTE: *The parking brake must be set if the operator leaves the seat with the engine running.*

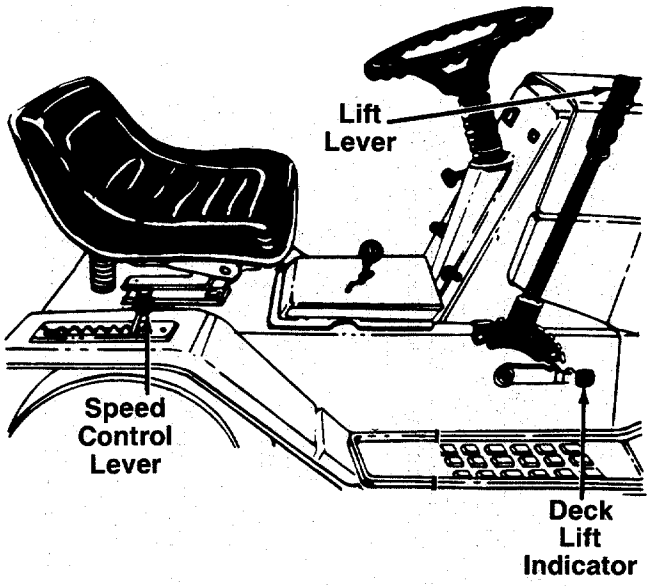


FIGURE 11.

INTERLOCKS (Not Shown)

Interlock safety switches are located by the clutch-brake pedal, lift lever, the shift lever and under the seat.

Before the engine will start, the clutch-brake pedal must be depressed all the way and the lift lever must be in the disengaged position.

Before the unit can be shifted into reverse or if the operator leaves the seat, lift lever must be in the disengaged position.

CUTTING CONTROLS

A. LIFT LEVER

The lift lever is used to raise and lower the cutting deck and to engage and disengage the cutting blades. Pulling it all the way back and locking it disengages the blades. The lift lever must be in the disengaged position when starting the engine, when shifting into reverse or if the operator leaves the seat.

B. DECK LIFT INDICATOR

The deck lift indicator marks the position being used for the lift lever. Select the lift lever position desired, press the indicator lever outward, move it to the position immediately below the lift lever and release the indicator lever. See figure 11.

C. SETTING THE CUTTING HEIGHT

1. Select the position for the lift lever which gives the desired cutting height. Move the deck lift indicator so that the lift lever can be returned to the same position after it is raised.
2. Move the deck wheels to the hole location so the wheels are ¼ to ½ inch above the ground.

OPERATION

CAUTION

- READ OPERATOR'S MANUAL(S) • NEVER CARRY CHILDREN
- KNOW LOCATION AND FUNCTION OF ALL CONTROLS
- KEEP SAFETY DEVICES (GUARDS, SHIELDS AND SWITCHES) IN PLACE AND WORKING
- REMOVE OBJECTS THAT COULD BE THROWN BY BLADE(S)
- DO NOT OPERATE THE UNIT WHEN CHILDREN AND OTHERS ARE AROUND
- ALWAYS LOOK BEHIND THE UNIT BEFORE BACKING UP
- DO NOT OPERATE THE UNIT WHERE IT COULD SLIP OR TIP
- IF THE UNIT STOPS GOING UPHILL, STOP BLADE(S) AND BACK SLOWLY DOWNHILL
- BE SURE BLADE(S) AND ENGINE ARE STOPPED BEFORE PLACING HANDS OR FEET NEAR BLADE(S)
- BEFORE LEAVING OPERATOR'S POSITION, DISENGAGE THE BLADE(S), PLACE THE SHIFT LEVER IN NEUTRAL, ENGAGE THE PARKING BRAKE, SHUT ENGINE OFF AND REMOVE THE KEY

TIRE PRESSURE

The tires on your unit may be over-inflated for shipping purposes. Reduce the tire pressure before operating the unit. Recommended operating tire pressure is approximately 12 p.s.i. (check sidewall of tire for tire manufacturer's recommended pressure).

WARNING: Maximum tire pressure under any circumstances is 30 p.s.i. Equal tire pressure should be maintained on all tires.

STARTING THE ENGINE

NOTE: *To open the hood, simply lift up on both sides of the hood.*

1. Service the engine with oil and gasoline as described in the engine manual.
2. Depress the clutch-brake pedal and set the parking brake.
3. Place the lift lever in the DISENGAGED position. See figure 10.

IMPORTANT: This unit is equipped with a **safety interlock system** for your protection. The purpose of the safety interlock system is to prevent the engine from cranking or starting unless the clutch-brake pedal is depressed and the lift lever is in the disengaged position. In addition, the lift lever must be in the disengaged position when the unit is put into reverse or the engine will shut off. If the operator leaves the seat with the lift lever engaged and/or without setting the parking brake, the engine will shut off.

WARNING: Do not operate the lawn tractor if the interlock system is malfunctioning because it is a safety device, designed for protection.

4. Set the throttle control in the FAST position. See figure 10.
5. Pull out choke knob to choke engine (a warm engine may not require choking).
6. Turn the ignition key to the START position. When the engine is running, let the key return to the ON position. See figure 10.
7. Push choke knob in gradually. Move the throttle control to desired engine speed.

STOPPING THE ENGINE

Turn the ignition key to the left to the OFF position. Remove the key to prevent accidental starting.

IMPORTANT: If you strike a foreign object, stop the engine. Remove wire from spark plug, thoroughly inspect the unit for any damage, and repair the damage before restarting and operating the mower.

NOTE: *If any problems are encountered, refer to the Trouble Shooting Chart on page 20.*

OPERATING THE LAWN TRACTOR

1. Set the desired cutting height.
2. Start the engine as instructed on this page.
3. Move throttle control to ¾ or full throttle to prevent strain on the engine and to operate the cutting blades.
4. Place the shift lever in either the FORWARD or REVERSE position.

WARNING: Look to the rear before backing up.

5. Release the parking brake by depressing the clutch-brake pedal, pressing outward on the speed control lever and moving to desired position. Use first speed position when operating the lawn tractor for the first time.
6. Release clutch-brake pedal slowly to put unit into motion.
7. The lawn tractor is brought to a stop by depressing the clutch-brake pedal.

NOTE: *When operating the unit initially, there will be little difference between the highest two speeds until after the belts have seated themselves into the pulleys during the break-in period.*

Be sure that the lawn is clear of stones, sticks, wire, or other objects which could damage lawn mower or engine. For best results and to insure more even grass distribution, do not mow when lawn is excessively wet.

WARNING: Before leaving the operator's position for any reason, disengage the blades, place the shift lever in neutral, engage the parking brake, shut engine off and remove the key.

When stopping the unit to empty a grass bag, etc., follow the instructions above. This procedure will also eliminate "browning" the grass, which is caused by hot exhaust gases from a running engine.

If unit stalls with speed control in high speed, or if unit will not operate with speed control lever in a low speed position, proceed as follows.

1. Place shift lever in NEUTRAL.
2. Restart engine.
3. Place speed control lever in high speed position.
4. Release clutch-brake pedal fully.
5. Depress clutch-brake pedal.
6. Place speed control lever in desired position.
7. Place shift lever in either FORWARD or REVERSE, and follow normal operating procedures.

OPERATING THE CUTTING BLADES

The cutting blades may be engaged while the lawn tractor is moving or standing still. DO NOT engage the cutting blades abruptly as the sudden belt tension on the pulley may cause the engine to stall.

WARNING: Keep feet and hands away from the discharge opening, the blades or any part of the deck. When the unit is used for other than mowing operations, the blade drive should be disengaged.

Move the lift lever into the DISENGAGED position to raise the deck and disengage the blades.

GRASS COLLECTOR Model 190-063 is available as optional equipment for the lawn tractors shown in this manual.

WARNING: The mower should not be operated without the entire grass catcher or chute deflector in place.

NOTE: *Under normal usage bag material is subject to wear, and should be checked periodically. Be sure any replacement bag complies with the mower manufacturer's recommendations.*

For replacement bags, use only factory authorized replacement bag.

ADJUSTMENTS

SEAT ADJUSTMENT

The seat may be adjusted to different positions. Refer to "Attaching the Seat" in assembly instructions.

STEERING WHEEL ADJUSTMENT

There are two height positions for the steering wheel. To adjust the height of the steering wheel, remove the hex bolt and hex lock nut on the steering shaft. Place the steering wheel in the position desired and secure with hex bolt and hex lock nut. Refer to figure 5.

NOTE: *When raising the height of the steering wheel, stretch the steering bellow to cover the steering shaft.*

DECK LEVELING ADJUSTMENT

If an uneven cut is obtained, the deck may be leveled as follows.

With unit on hard, level surface, measure the distance from the bottom edge of the center of the left side of deck to the ground. Measure the same distance on the center of the right side of the deck, just behind the chute area. Or, place the blades in a straight line, and measure the distance from the outside edge of the blade tips to the ground.

Adjust the lift link on the left side of the deck as necessary. See figure 12. Recheck the adjustment.

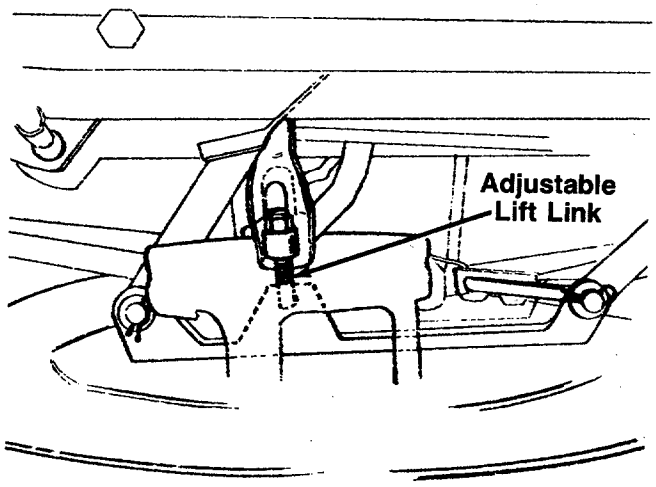


FIGURE 12.

SPEED CONTROL ADJUSTMENT (See figure 13)

NOTE: *When operating the unit initially or after replacing the belts, there will be little difference between the highest two speeds until after the belts have gone through a break-in period and have seated themselves into the pulleys.*

First, adjust the speed control lever by pushing the clutch-brake pedal forward until the stop on the brake rod is against the frame. See figure 13. Have another person hold the pedal in this position as you make the following adjustment. Place the speed control lever in parking brake position. Remove the hairpin clip and flat washer, and adjust the ferrule on the rod so it is against the back end of the slot. See figure 13. Replace the flat washer and hairpin clip.

Next, adjust the speed control link as follows to obtain the correct neutral adjustment.

1. Start the engine.
2. Place the shift lever in Neutral position.
3. Place the speed control lever in high speed position.
4. Release the clutch-brake pedal completely, then slowly depress the pedal all the way (to park position). Hold the pedal in this position.
5. Turn the engine off.
6. After engine stops completely, release the clutch-brake pedal.
7. Place speed control lever in second position.
8. Remove the cotter pin and flat washer which secures the speed control link to the variable speed torque bracket assembly.
9. Push the clutch-brake pedal backward by hand as far as it will go using light pressure. Hold it in this position as you thread the speed control link in or out of the ferrule until it lines up with the pin on the variable speed torque bracket assembly.
10. Secure speed control link to variable speed torque bracket assembly with flat washer and cotter pin.

NEUTRAL ADJUSTMENT

1. Place the transmission in neutral. (The unit will move freely when pushed forward and backward with the parking brake released.)
2. Loosen the bolt which secures the shift lever assembly to the shift lever link. See figure 14.
3. Place the shift lever in the netural slot. See figure 14.
4. Tighten the bolt to 13 foot pounds.

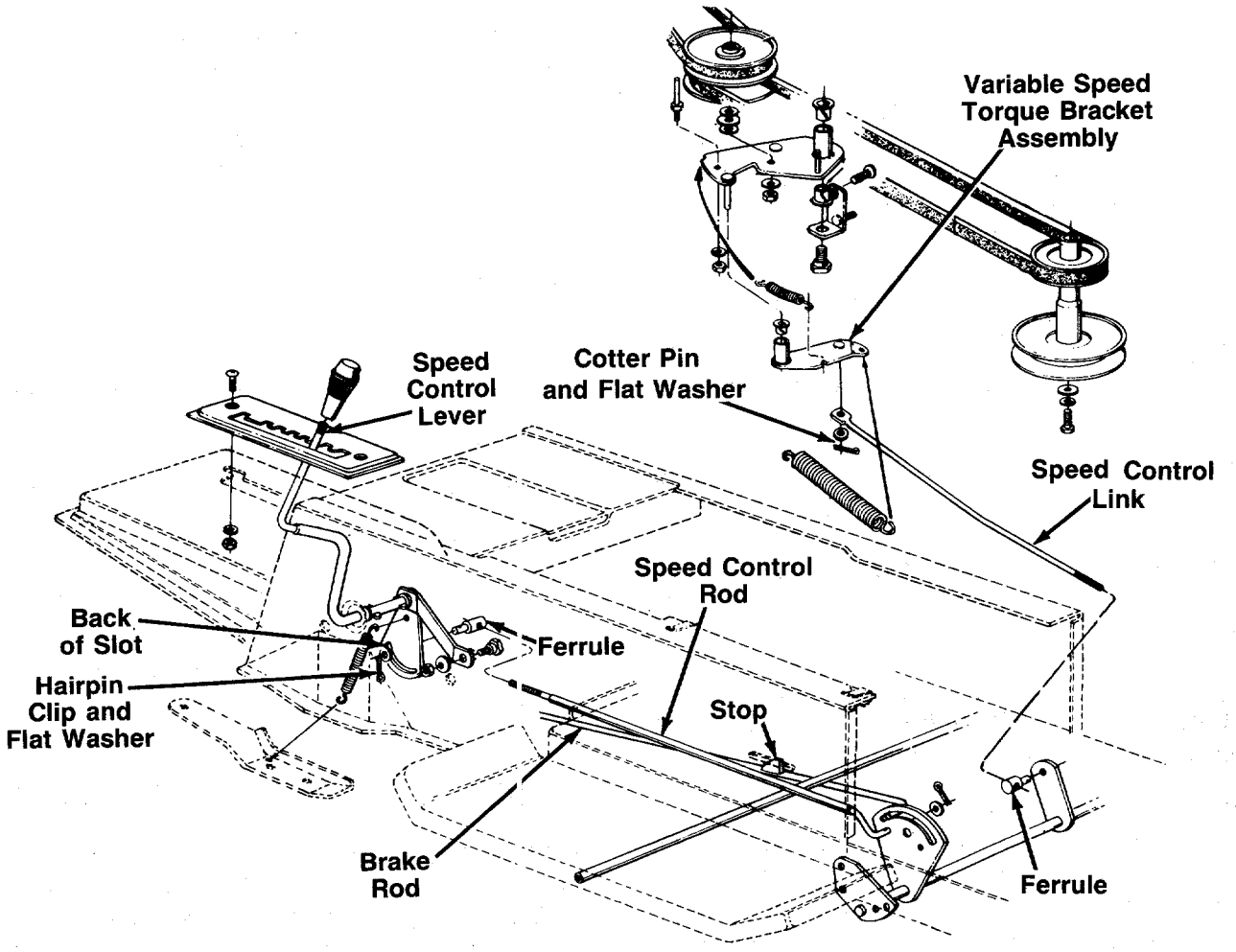


FIGURE 13.

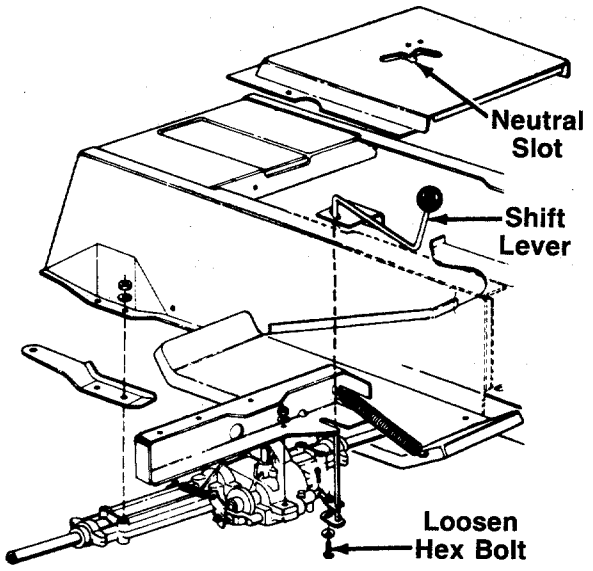


FIGURE 14.

WHEEL ADJUSTMENT

The caster (forward slant of the king pin) and the camber (tilt of the wheels out at the top) require no adjustment. Automotive steering principles have been used to determine the caster and camber on the tractor. The front wheels should toe-in 1/8 inch.

To adjust the toe-in, follow these steps.

1. Remove the hex nut and lock washer, and drop the tie rod end from the wheel bracket. See figure 15.
2. Loosen the hex jam nut on tie rod.
3. Adjust the tie rod assembly for correct toe-in.

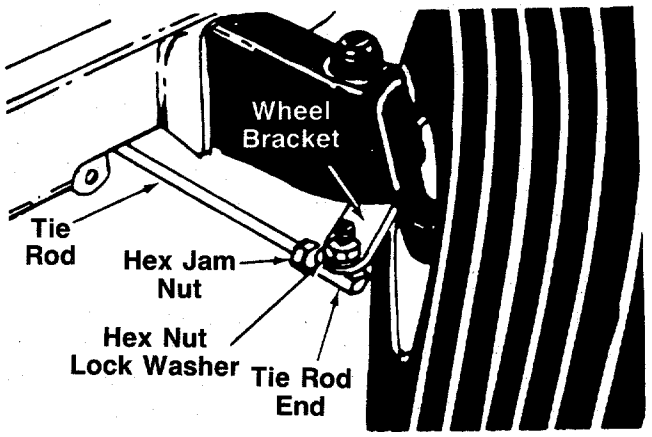


FIGURE 15.

Dimension "B" should be approximately 1/8" less than Dimension "A." See figure 16.

A.) To increase Dimension "B," screw tie rod into tie rod end.

B.) To decrease Dimension "B," unscrew tie rod from tie rod end.

C.) Reassemble tie rod. Check dimensions. Readjust if necessary.

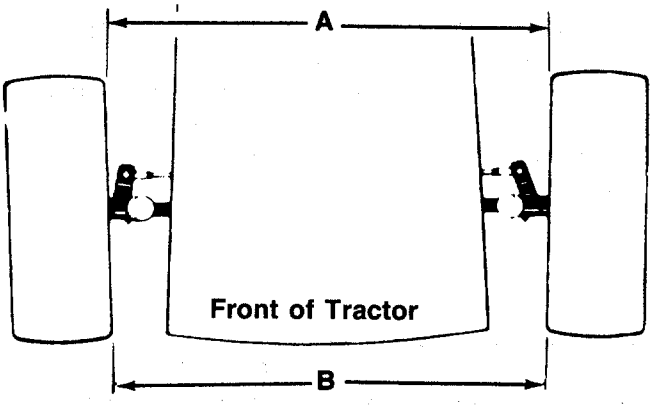


FIGURE 16.

CARBURETOR ADJUSTMENT

WARNING: If any adjustments are made to the engine while the engine is running (e.g. carburetor), disengage all clutches and blades. Keep clear of all moving parts. Be careful of heated surfaces and muffler.

Minor carburetor adjustment may be required to compensate for differences in fuel, temperature, altitude and load. To adjust the carburetor, refer to the separate engine manual packed with your unit.

NOTE: *A dirty air cleaner will cause an engine to run rough. Be certain air cleaner is clean and attached to the carburetor before adjusting carburetor. Refer to the separate engine manual.*

BRAKE ADJUSTMENT (See figure 17)

The brake is located by the right rear wheel inside the frame. During normal operation of this machine, the brake is subject to wear and will require periodic examination and adjustment.

WARNING: Do not have the engine running when you adjust the brake.

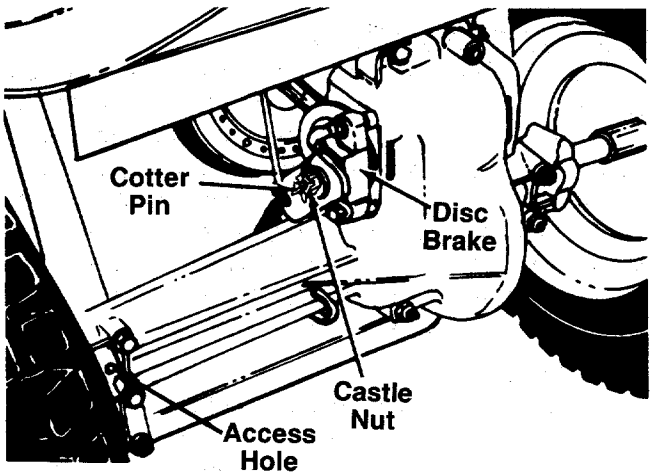


FIGURE 17.

To adjust the brake, remove the cotter pin. Adjust the castle nut so the brake starts to engage when the brake lever is ¼" to 5/16" away from the axle housing.

NOTE: *Figure 17 is shown with the unit tipped up on rear wheels for clarity only.*

LUBRICATION

WARNING: Always stop engine and disconnect spark plug wire before cleaning, lubricating or doing any kind of work on lawn tractor.

STEERING GEARS

Lubricate teeth of steering gears with automotive multi-purpose grease after every 25 hours of operation or once a season. See figure 18.

STEERING SHAFT

Lubricate steering shaft at least once a season with light oil.

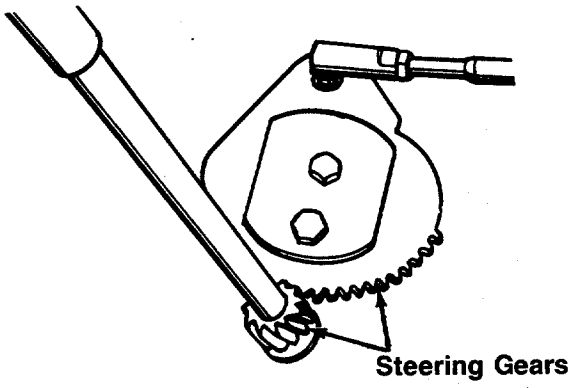


FIGURE 18.

TRANSAXLE

The transaxle is lubricated at the factory and does not require checking. If disassembled for any reason, lubricate with 10 oz. of Shell grease, part number 737-0148.

The rear axles may be lubricated once a season, using the access hole on each side of the transaxle housing. See figure 17. A push-type hand grease gun, equipped with a special flush coupler is required. Use Shell grease, part number 737-0148.

WHEELS

The front wheels are provided with grease fittings. The rear wheels must be removed from the axle for lubrication. Lubricate both front and rear wheels at least once a season with automotive multi-purpose grease.

PIVOT POINTS

Lubricate all pivot points with light oil at least once a season.

MAINTENANCE

WARNING: Disconnect the spark plug wire and ground against the engine before performing any repairs or maintenance.

TROUBLE SHOOTING

Refer to page 20 of this manual for trouble shooting information.

CRANKCASE OIL

Check the oil level in the crankcase before each use of the machine and after every five hours of operation. Oil level should be maintained as instructed in the separate engine manual.

After the first five hours of operating a new engine, drain the oil from the crankcase while engine is still hot and refill crankcase with new oil; thereafter change the oil every 25 hours of operation. Refer to the engine manual.

AIR CLEANER

Under normal operating conditions, the air cleaner, located on top of the carburetor, must be serviced after every ten hours of use. Under extremely dusty operating conditions, the air cleaner must be serviced after every hour of operation. To service the air cleaner, refer to the separate engine manual packed with your unit.

CLEANING ENGINE AND BLADE HOUSING

Any fuel or oil spilled on the machine should be wiped off promptly. Grass, leaves, and other dirt must not be left to accumulate around the cooling fins of the engine or on any part of the machine.

Clean the underside of the blade housing after each mowing.

SPARK PLUGS

The spark plugs should be cleaned and the gap reset once a season. Spark plug replacement is recommended at the start of each mowing season; check engine manual for correct plug type and gap specification.

CUTTING BLADES

A. Removal for Sharpening or Replacement

WARNING: Be sure to disconnect and ground the spark plug wire and remove ignition key before working on the cutting blade to prevent accidental engine starting. Protect hands by using heavy gloves or a rag to grasp the cutting blades.

1. Remove the large bolt and lock washer which holds the blade and adapter to the blade spindle.
2. Remove the blade and adapter from the spindle.
3. If the blade or blade adapter needs replacing, remove the two small bolts, lock washers and nuts which hold the blade to the adapter.

B. Sharpening

Remove the cutting blades by following the directions of the preceding section.

When sharpening the blades, follow the original angle of grind as a guide. It is **extremely important** that each cutting edge receives an equal amount of grinding to prevent an unbalanced blade. An unbalanced blade will cause excessive vibration when rotating at high speeds, may cause damage to the mower and could break, causing personal injury.

The blade can be tested for balance by balancing it on a round shaft screwdriver. Remove metal from the heavy side until it balances evenly.

NOTE: *It is recommended that the blade always be removed from the adapter for the best test of balance.*

C. Reassembly

Before reassembling the blade and the blade adapter to the unit, lubricate the spindle and the inner surface of the blade adapter with light oil. Lubricating the bolt holes, bolts and inner surface of the nuts with light oil is also recommended. A 4 oz. plastic bottle of light oil lubricant is available. Order part number 737-0170. Engine oil may also be used.

When replacing blades, be sure to install the blade with the side of the blade marked "Bottom" (or with part number) facing the ground when the mower is in the operating position.

Blade Mounting Torque

3/8" Dia. Bolt 375 in. lb. min., 450 in. lb. max.
5/16" Dia. Bolt 150 in. lb. min., 250 in. lb. max.

To insure safe operation of your unit, ALL nuts and bolts must be checked periodically for correct tightness.

FUEL FILTER

Your unit is equipped with a replaceable in-line fuel filter. Replace filter whenever contamination or discoloration is noticed. Order replacement filter through your engine authorized service dealer.

BELT REMOVAL AND REPLACEMENT

WARNING: Disconnect the spark plug wire and ground it against the engine. Block the wheels of the unit.

NOTE: *Figures 21 through 24 are shown with the unit tipped up for clarity. It is not necessary to tip the unit to remove the belts.*

However, if tipping the unit is desired, remove the battery from the unit. To prevent gasoline leakage, drain the gasoline, or remove the fuel tank cap, place a thin piece of plastic over the neck of the fuel tank and screw on the cap. Be certain to remove the plastic when finished changing the belts. Block unit securely.

REAR DRIVE BELT

1. Place shift lever in neutral position. Unscrew the shift knob. Remove the two truss head screws which secure the transmission cover. See figure 19A.
2. Lift the transmission cover. Unplug the safety wire from beneath the transmission cover. See figure 19B. Remove transmission cover.

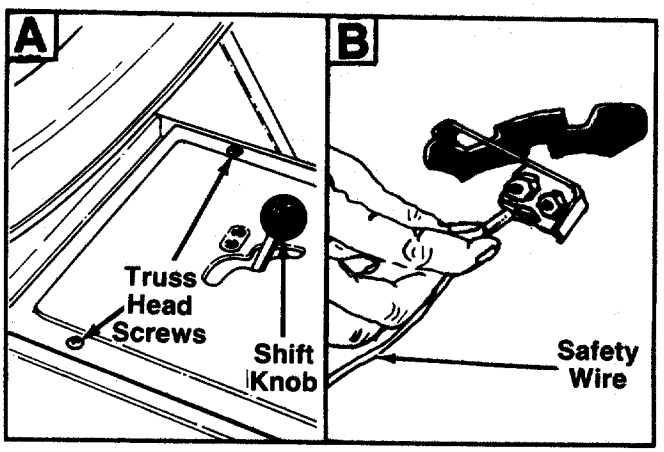


FIGURE 19.

3. Push the idler pulley toward the right side of the unit. Lift the belt over the idler pulley. See figure 20.
4. Remove the belt from the variable speed pulley.
5. Remove the two bolts which hold the shift lever bracket to the frame on the left side of the unit. Swing the bracket toward the right so the belt can be removed from the transmission pulley. See figure 20.
6. Replace belt, and reassemble in reverse order.

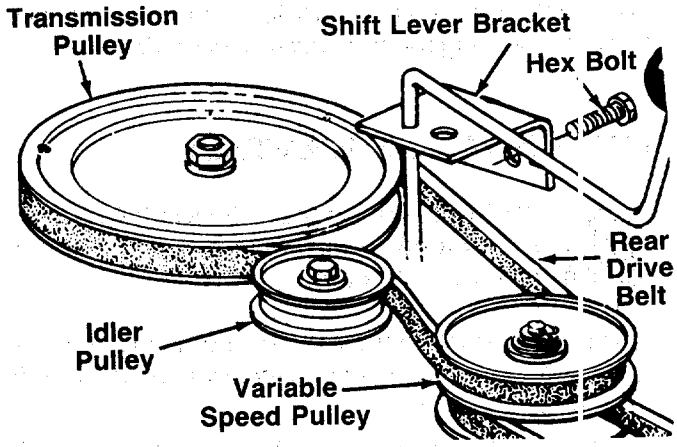


FIGURE 20.

FRONT DRIVE BELT

1. To remove the front drive belt, first remove the rear drive belt from the idler pulley and variable speed pulley.
2. Place the lift lever in the disengaged position.
3. Remove the three hex bolts (belt keepers) from the engine pulley belt guard. Refer to figure 21.

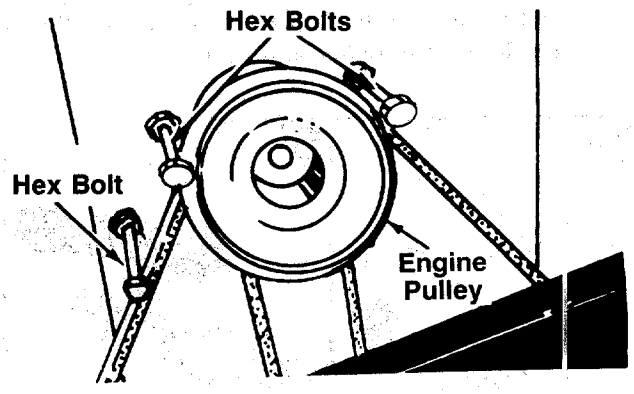


FIGURE 21.

4. Unhook the deck belt from the engine pulley.
5. Remove the two bolts, lock washers and nuts on each side of the frame which hold the engine pulley belt guard to the frame. See figure 22.

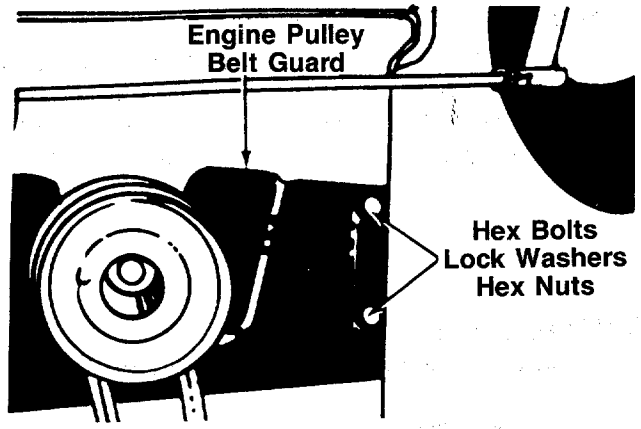


FIGURE 22.

6. Remove the engine pulley belt guard by slipping it back and to the right. See figure 23.

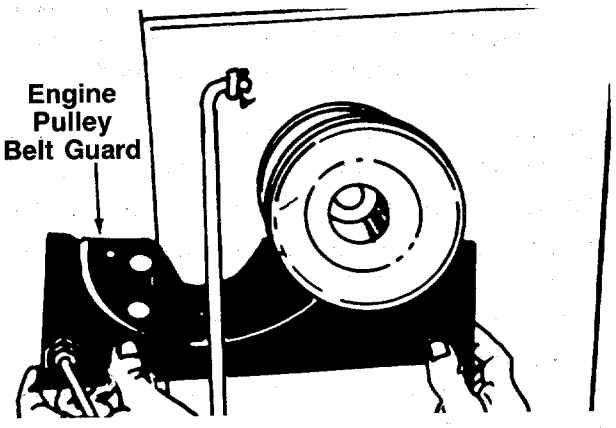


FIGURE 23.

7. Place the clutch-brake pedal in park position.
8. Push forward on the variable speed pulley, and lift the belt off the engine and remove the belt from the engine pulley.
9. Release the clutch-brake pedal. Using the pedal to move the variable speed pulley as necessary, lift the belt up and off the variable speed pulley.

NOTE: *When reassembling, make certain belt is inside the pins. See figure 24.*

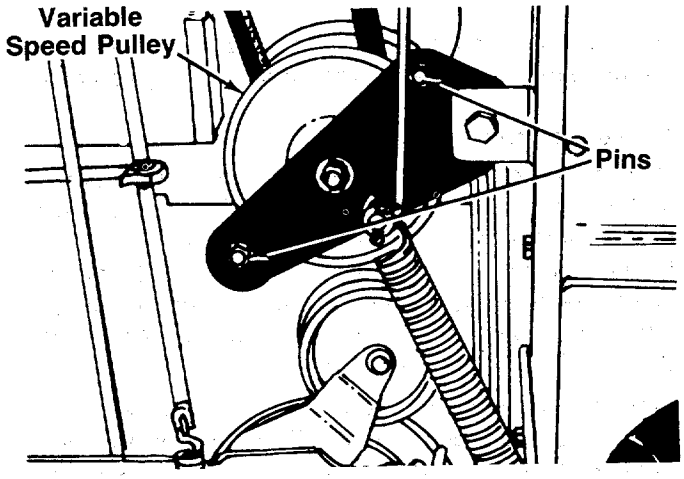


FIGURE 24.

10. Reassemble with a new belt, following instructions in reverse order.

BATTERY REMOVAL OR INSTALLATION

WARNING: When removing the battery, follow this order of disassembly to prevent the screwdriver from shorting against the frame.

1. Remove the Negative cable.
2. Remove the Positive cable.

To install a battery:

1. Attach the Positive cable.
2. Attach the Negative cable.

JUMP STARTING

1. Attach the first jumper cable from the Positive terminal of the good battery to the Positive terminal of the dead battery.
2. Attach the second jumper cable from the Negative terminal of the good battery to the FRAME OF THE UNIT WITH THE DEAD BATTERY.

WARNING: Failure to use this starting procedure could cause sparking, and the gas in either battery could explode.

BATTERY MAINTENANCE

1. Check periodically (every two weeks or before and after charging) to be sure electrolyte level is above the lowest line on battery. Add only distilled water or a good quality drinking water. NEVER add additional acid or other chemicals to battery after initial activation.
2. The battery should be checked with a hydrometer after every 25 hours of operation. If the specific gravity is less than 1.225, remove battery and recharge.
3. Coat the terminals and exposed wiring with a thin coat of grease or petroleum jelly for longer service and protection against electrolyte corrosion.
4. The battery should be kept clean. Any deposits of acid should be neutralized with soda and water. Be careful not to get this solution in the cells.

BATTERY STORAGE

1. Charge battery using normal methods. NEVER store discharged battery as it will not recover.
2. When storing battery for extended periods, disconnect battery cables. Removing battery from unit is recommended.
3. Store in cold, dry place.
4. Recharge battery whenever the specific gravity is less than 1.225, before returning to service, or every two months, whichever occurs first.

COMMON CAUSES FOR BATTERY FAILURE ARE:

1. Overcharging
2. Undercharging
3. Lack of water
4. Loose holds downs and/or corroded connections
5. Excessive loads
6. Battery electrolyte substitutes
7. Freezing of electrolyte

NOTE: *THESE FAILURES DO NOT CONSTITUTE WARRANTY.*

TIRES

Recommended operating tire pressure is approximately 12 p.s.i. (check sidewall of tire for tire manufacturer's recommended pressure). Maximum tire pressure under any circumstances is 30 p.s.i. Equal tire pressure should be maintained on all tires.

When installing a tire to the rim, be certain rim is clean and free of rust. Lubricate both the tire and rim generously. Never inflate to over 30 p.s.i. to seat beads.

WARNING: Excessive pressure (over 30 p.s.i.) when seating beads may cause tire/rim assembly to burst with force sufficient to cause serious injury.

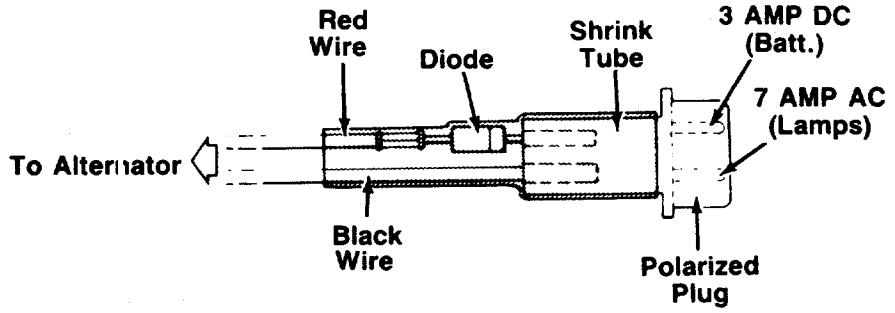
OFF-SEASON STORAGE

If the machine is to be inoperative for a period longer than 30 days, prepare for storage as follows.

1. Clean the engine and the entire unit thoroughly.
2. Lubricate all lubrication points. Wipe the entire machine with an oiled rag to protect the surfaces.
3. Refer to the engine section of this manual for correct engine storage instructions.
4. Refer to battery storage instructions on page 19.
5. Store unit in a clean, dry area.

NOTE: *When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rustproof the equipment. Using a light oil or silicone, coat the equipment, especially any chains, springs, bearings and cables.*

TROUBLE SHOOTING CHART FOR ELECTRIC START MODELS

TROUBLE	LOOK FOR	REMEDY
Engine will not crank	Battery installed incorrectly	The battery must be installed with the negative terminal, identified at the terminal post by (Neg, . or −), grounded. The positive terminal (Pos, P or +) attaches to the large cable from the solenoid. The small red wire from the fuse holder or circuit breaker is also attached to the positive terminal.
	Blown fuse or circuit breaker	Replace fuse with 7½ amp. fuse ¼ x 1¼" lg. Circuit breaker will reset itself when it cools off. Fuses or circuit breakers seldom open or fail without a reason. The problem must be corrected. Check for loose connections in the fuse holder. Replace fuse holder if necessary. A dead short may be in the cranking or charging circuit where the insulation may have rubbed through and exposed the bare wire. Replace the wire or repair with electrician's tape if the wire strands have not been damaged. Note: Look for a wire pinched between body panels, burned by the exhaust pipe or muffler or rubbed against a moving part.
	Battery is dead or weak	Use a hydrometer to check the condition of the battery. The Specific Gravity (s.g.) should be 1.265 at 80°F. (1.215 s.g. minimum needed for cranking engine). The reason for the battery failing must be determined. (1) Defective battery. Battery will not accept or hold a full charge. (2) Short circuit. Check for grounded wire. (3) Charging system not working. The charging system is an alternator located under the flywheel. It is unregulated and rated 3 amp. at 3600 r.p.m. A diode (rectifier) is located in the output lead just before the wire harness plug on the engine side.  The diode changes A.C. to D.C. to charge the battery. A bad diode can either fail to charge the battery or discharge the battery if the alternator is shorted as well as the diode. To test: (1) Disconnect charger lead from the battery (small red wire). (2) Connect 12 V small test lamp between the 3 amp. D.C. charge lead and the positive terminal of the battery. (3) With the engine off, the lamp should not light. If it does, the diode and possibly the alternator should be replaced. (4) Start the engine. The lamp should light. If it does not, the alternator (stator) or lead wire is bad and should be replaced.
	Mechanical failure (Wires and switches)	The interlock system includes two mechanical activated switches which are wired in series in the circuit used to energize the starter solenoid. While testing the interlock system, you will make the mower temporarily unsafe by permitting the engine to be started with the blade and clutch engaged. WARNING: While testing, disengage the clutch, shut off the blade control, set the parking brake and place the gear shift lever in neutral. Attach a wire (minimum 18 gauge) to the positive terminal of the battery and touch the other end to the small terminal on the solenoid. **If the engine does not crank:** (1) There is a loose connection or poor ground. (2) The solenoid may be bad. The solenoid can be checked by using a heavy wire (#8 gauge minimum) and jumping between the two large terminals. If the engine cranks, the solenoid is bad. (3) If the engine does not crank when you jump the solenoid, have the starter motor tested by an authorized engine dealer. If the engine does crank, the problem is with one of the safety switches, ignition switch or the wire between the fuse holder (or circuit breaker) and the small terminal on the solenoid. Note: Look for a poor connection at the switches or a defective switch. Replace if necessary.
Engine cranks but will not start	Throttle or choke not in starting position	Check owner's guide for correct position for throttle control and choke for starting.
	No spark to spark plug	Spark plug lead disconnected. Connect lead. Hold spark plug lead away from engine block about 1/8". Crank engine. There should be a spark. If not, have engine repaired. Faulty spark plug. To test, remove spark plug. Attach spark plug lead to spark plug. Ground the spark plug body against the engine block. Crank the engine. The spark plug should fire at the electrod Replace if it does not.

TROUBLE SHOOTING CHART FOR ELECTRIC START MODELS

TROUBLE	LOOK FOR	REMEDY
	No fuel to the carburetor	Gasoline tank empty. Fill. Fuel line or in-line fuel filter plugged. Remove and clean fuel line. Replace filter if necessary.
	Air filter dirty	If the air cleaner is dirty, the engine may not start. Clean or replace as recommended by the engine manufacturer.
Engine smokes	Engine loses crankcase vacuum	Dipstick not seated or broken. Replace defective part. Engine breather defective. Replace.
Excessive vibration	Bent or damaged blade spindle	**Stop engine immediately.** Check all pulleys, blade adapters, keys and bolts for tightness and damage. Tighten or replace any damaged parts.
	Bent blade	**Stop engine immediately.** Replace damaged blade. Only use original equipment blades.
Mower will not discharge grass or leaves uncut strips	Engine speed low Transmission selection Blades short or dull	Throttle must be set between 3/4 and full throttle. Use lower transmission speed. The slower your ground speed, the better the quality of cut. Sharpen or replace blades (uncut strip problem only).

OPTIONAL EQUIPMENT

At the time of manufacture of lawn tractor, the following optional equipment is available.

Description	Model No.
36″ Single Stage Snow Thrower	190-491-000
42″ Dozer Blade	190-485-000
Front Counterweight	190-745-000
Tire Chains—18 x 8.5	190-754-000
18 x 9.5	190-657-000
20 x 8	190-658-000
20 x 10	190-915-000
31 Lb. Wheel Weights	190-215-000
Grass Collector:	
38″ and 42″ Side Discharge Decks	190-063-000
Gang Reel (Set of three)	42-0195*
38″ Lawn Sweeper	42-0173*
Heavy Duty Lawn Roller	31-0179*
Heavy Duty Dump Cart	41-0171*
Tine De-Thatcher	41-0166*

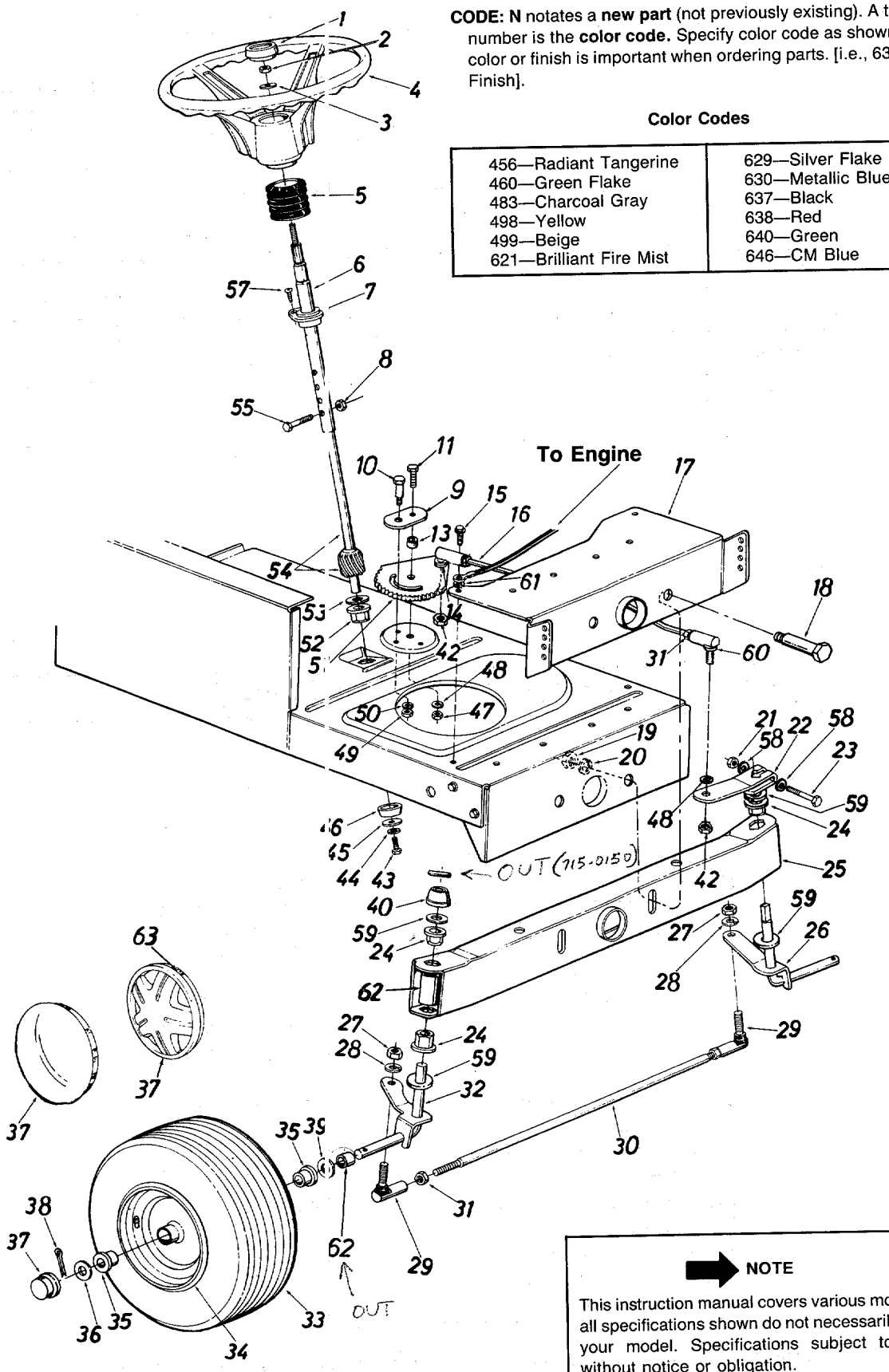
*Available through your local dealer or from Agri-Fab Inc., 303 W. Raymond Street, Sullivan, Illinois 61951 (217) 728-8388.

Models 660 thru 689

CODE: N notates a **new part** (not previously existing). A three digit number is the **color code.** Specify color code as shown below if color or finish is important when ordering parts. [i.e., 638 for Red Finish].

Color Codes

456—Radiant Tangerine	629—Silver Flake
460—Green Flake	630—Metallic Blue
483—Charcoal Gray	637—Black
498—Yellow	638—Red
499—Beige	640—Green
621—Brilliant Fire Mist	646—CM Blue



NOTE

This instruction manual covers various models, and all specifications shown do not necessarily apply to your model. Specifications subject to change without notice or obligation.

Models 660 thru 689

PARTS LIST FOR FRONT ENGINE LAWN TRACTORS

REF. NO.	PART NO.	CODE	DESCRIPTION
1	731-0220		Steering Wheel Cap
2	712-0237		Hex L-Nut 5/16-24 Thd.
3	736-0242		Belleville Wash. .345" I.D.
4	731-0806A		Steering Wheel
5	731-0559		Steering Bellow (Style 2, 3, 7 & 8)
	731-0954		Steering Bellow (Style 0, 4, 9)
6	16512		Steering Column Ass'y.
7	741-0356		Flange Bearing .890 I.D. x 1.36 O.D.
8	712-0324		Hex L-Nut ¼-20 Thd.
9	17198		Retainer Plate
10	738-0141		Shoulder Bolt .437" Dia. x .35 Lg. 5/16-18 Thd.
11	710-0152		Hex Bolt 3/8-24 x 1.0" Lg. (Grade 5)
13	750-0535		Spacer .380" I.D. x .625" O.D. x .227
14	736-0169		L-Wash. 3/8" I.D.*
15	710-0726		Hex Wash. Hd. Self-Tap Scr.
16	711-0788		Steering Drag Link
17	17621	N	Front Pivot Brkt.
18	738-0527		Shoulder Bolt .498" Dia. x 2.04 Lg. 3/8-16 Thd.
19	712-0798		Hex Nut 3/8-16 Thd.*
20	736-0169		L-Wash. 3/8" I.D.*
21	712-0237		Hex Cent. L-Nut 5/16-24 Thd.
22	16481		Steering Arm Front Axle
23	710-0772		Hex Bolt 5/16-24 x 2.00" Lg. (Grade 5)
24	741-0225		Hex Flg. Brg. .634 I.D.
25	14608		Pivot Bar Ass'y.
26	17585	N	Front Axle Ass'y.—L.H.
27	712-0241		Hex Nut 3/8-24 Thd.*
28	736-0169		L-Wash. 3/8" I.D.*
29	723-3018		Ball Joint 3/8-24 Thd.
30	747-0753	N	Tie Rod
31	712-0711		Hex Jam Nut 3/8-24 Thd.*
32	17584	N	Front Axle Ass'y.—R.H.
33	**		Wheel Ass'y. Comp.**
	**		Tire Only**
34	**		Front Wheel Rim Only
35	**		Bearing
36	736-0285		Fl-Wash. .635 I.D. x 1.59" O.D.
37	731-0484A		Front Wheel Hub Cap
	734-0541		Front Wheel Hub Cap (Chrome—Optional)
	734-1503		Spoked Hub Cap (Optional)
38	714-0470		Cotter Pin 1/8" Dia. x 1.25"*
39	736-0187		Fl-Wash. .640" I.D. x 1.24" O.D.
40	726-0214		Push Cap 5/8" Dia. Rod
42	712-0711		Hex Jam Nut 3/8-24 Thd.*
43	710-0538		Hex L-Bolt 5/16-18 x .62"*
44	736-0119		L-Wash. 5/16" I.D.*
45	736-0343		Fl-Wash. .33" I.D. x 1.25" O.D.
46	750-0532		Spacer (Plastic)
47	712-0241		Hex Nut 3/8-24 Thd.*
48	736-0169		L-Wash. 3/8" I.D.*
49	712-0267		Hex Nut 5/16-18 Thd.*
50	736-0119		L-Wash. 5/16" I.D.*
51	717-0622		Steering Gear Segment
52	741-0225		Hex Flg. Brg. .634 I.D.
53	736-0187		Fl-Wash. (Hardened)
54	738-0522A		Steering Shaft Lower
55	710-0958		Hex Bolt ¼-20 x 1.25" Lg. (Special)
57	710-0837		Oval Hd. Cr.—Sunk Scr. #10 x 5/8" Lg.
58	736-0271		Wave-Wash. .32" I.D. x .62" O.D.
59	736-0187		Fl-Wash. (Hardened)
60	723-3018		Drag Link Ball Joint 3/8-24 Thd.
61	736-0607		Ext. L-Wash. 5/16" I.D.
62	731-1134	N	Plastic Tube
63	727-0425		Spring Clip

*For faster service obtain standard nuts, bolts and washers locally. If these items cannot be obtained locally, order by part number and size as shown on parts list.

**FRONT WHEEL CHART

Description	15" x 6"	13" x 5"
Wheel Assembly Comp.	734-0863	734-1229
Tire Only	734-0864	734-0298
Rim Only	734-0997A	734-1227
Bearing	741-0487	741-0487
Air Valve	734-0255	734-0255
Grease Fitting	737-0146	737-0146

Note: If brand of tire is important, order by part number and description (description is printed on the sidewall of tire) [i.e. Armstrong Super Turf, Goodyear Softrac, Carlisle Turf Saver, etc.].

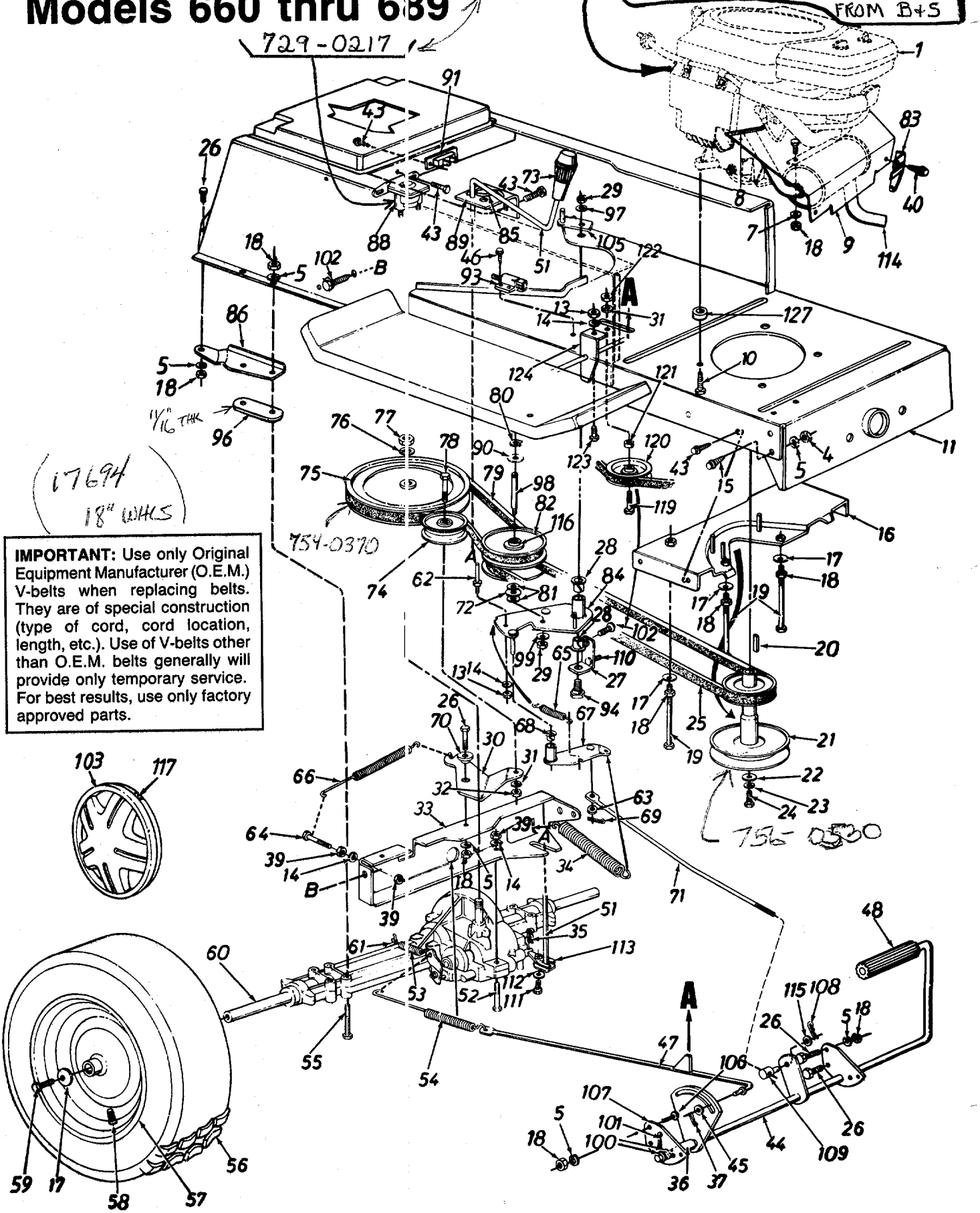
Models 660 thru 689

14 H.P.

IN CASE OF VAPOR LOCK ORDER HIGH SPEED JET 231500 FROM B+S

725-0771

729-0217



(17694 18" WHLS)

IMPORTANT: Use only Original Equipment Manufacturer (O.E.M.) V-belts when replacing belts. They are of special construction (type of cord, cord location, length, etc.). Use of V-belts other than O.E.M. belts generally will provide only temporary service. For best results, use only factory approved parts.

Models 660 thru 689

PARTS LIST FOR FRONT ENGINE LAWN TRACTORS

REF. NO.	PART NO.	CODE	DESCRIPTION
1	—		Engine
4	712-0123		Hex Nut 5/16-24 Thd.*
5	736-0119		L-Wash. 5/16" I.D.*
7	736-0170		Spec. L-Wash. .38" I.D. x .88"
8	731-0511-12		Trim Strip
9	16934		Front Heat Shield
10	710-0502A		Hex L-Wash. Tap Scr. 3/8-16 x 1.5" Lg. (B&S)
	710-1035		Hex Wash Hd. AB-Tap Scr. 3/8-16 Thd. (B&S Vanguard)
11	17620	N	Lower Frame Ass'y.
13	712-0287		Hex Nut ¼-20 Thd.*
14	736-0329		L-Wash. ¼" I.D.*
15	710-1012		Rib Neck Bolt 5/16-24 x .84" Lg.
16	16219A		Belt Guard Brkt. Ass'y.
17	736-0242		Bell-Wash. .345" I.D. x .88"
18	712-0267		Hex Nut 5/16-18 Thd.*
19	710-0190		Hex Bolt 5/16-18 x 4.0"*
20	714-0114		Sq. Key ¼" x ¼" x 2.00"
21	756	756-0530	Engine Pulley
22	736-0322		Fl-Wash. 7/16" I.D. x 1.25"
23	736-0171		L-Wash. 7/16" I.D.*
24	710-0757		Hex Bolt 7/16-20 x 1.50" Lg.
25	754-0280		Variable-Speed Belt
26	710-0118		Hex Bolt 5/16-18 x .75" Lg.
27	16553		Bearing Shaft Bracket Ass'y.
28	741-0295		Flanged Nyliner Brg. 5/8" I.D. x .88" Lg.
29	712-0241		Hex Nut 3/8-24 Thd.*
30	17643	N	Idler Bracket 20" wheels
31	736-0169		L-Wash. 3/8" I.D.*
32	712-0241		Hex Nut 3/8-24 Thd.*
33	17629	N	Transaxle Support Brkt.
34	732-0556		Ext. Spring .94" O.D. x 7.58"
35	714-0149B		Inter. Cotter Pin
36	750-0802	N	Spacer .63" I.D.
37	714-0507		Cotter Pin 3/32" Dia. x .75"*
39	712-0138		Hex Nut ¼-28 Thd.
40	710-0776		Hex AB-Tap Scr. ¼" x .62" Lg.
43	710-0599		Hex Wash. Hd. S-Tap Scr. ¼-20 x .50" Lg.
44	17715	N	Clutch/Brake Pedal Ass'y.
45	736-0117		Fl-Wash.
46	710-0351		Truss Mach. Scr. B-Tap Scr. #10 x .5" Lg.
47	17686	N	Brake Rod Ass'y.
48	735-0196		Foot Pad
51	17705	N	Shift Lever Ass'y.
52	710-0559		Hex Bolt ¼-28 x 1.75" Lg.*
53	732-0264		Ext. Spring .38" O.D. x 2.5"
54	732-0413		Ext. Spring .59" O.D. x 7.08"
55	710-3056	N	Hex Bolt 5/16 x 18 x 3.25" Lg. (Used w/18" Wheels)
	710-0176		Hex Bolt 5/16-18 x 2.75"* (used w/20" Wheels)
56	**		Wheel Ass'y. Comp.
	**		Tire Only
57	**		Wheel Rim Only
58	734-0255		Air Valve (Service Only)
59	710-0627		Hex Bolt 5/16-24 x .75" Lg.*
60	717-0542	N	Transaxle Complete
61	732-0454		Brake Return Spring Anchor
62	711-0768		Belt Guard Pin ¼-20 Thd.
63	736-0275		Fl-Wash. .34" I.D. x .68" O.D.
64	710-0428		Hex Bolt ¼-28 x 1.25" Lg.*
65	732-0568		Ext. Spring
66	732-0384		Ext. Spring .62" O.D. x 6.12"
67	16554A		Variable Speed Torque Brkt. Ass'y.
68	741-0419		Flanged Bearing
69	714-0507		Cotter Pin 3/32" Dia.*
70	748-0234		Shoulder Spacer .27" Lg.
71	747-0530		Speed Control Link
72	741-0405		Truss Bearing .56 Dia. x 1.25"
73	720-0232		Shift Knob
74	756-0437		Fl-Idler Pulley 3.25" x .75"
75	756-0563		½" "V"-Pulley (Used w/18" Wheels)
	756-0557	N	½" "V"-Pulley (Used w/20" Wheels)
76	736-0921		L-Wash. ½" I.D.*
77	712-0922		Hex Jam Nut ½-20 Thd.*
78	710-0539		Hex Bolt 3/8-24 x 1.75" Lg.
79	754-0370		Variable Speed Belt
80	716-0114		Snap Ring .56" Dia.
81	736-0355		Fl-Wash.
82	717-0800		Variable Speed Pulley Ass'y. 5" O.D.
83	17450		Heat Shield Mtg. Brkt.—R.H. (Not Shown)
	17449		Heat Shield Mtg. Brkt.—L.H.
84	16354B	N	Variable Speed Brkt. Ass'y.
85	732-0525		Comp. Spring—Clip
86	17668	N	Axle Support Brkt.—R.H.
	17669	N	Axle Support Brkt.—L.H. (Not Shown)
88	725-1426	N	Solenoid
89	17630	N	Shift Lever Bracket
90	736-0414		Teflon Washer .565" I.D.
91	725-0459		Circuit Breaker
93	725-3169	N	Safety Switch (Clutch)
94	738-0755		Shld. Bolt 3/8-24 x 3.12" Lg.
96	748-0334	N	Transaxle Spacer (Used w/18" Wheels)
97	736-0105		Bell-Wash. .38" I.D. x .88"
98	738-0569		Shaft .56" Dia. x 3.875" Lg.
99	736-0331		Bell-Wash. .39" I.D. x 1.12"
100	736-0256		Fl-Wash. .64" I.D. x .94"
101	714-0111		Cotter Pin 3/32" Dia. x 1.0"*
102	710-0604		Hex Wash. Hd. Scr. 5/16-18 x .62" Lg.
103	734-1504		Hub Cap (Optional)
105	16067		Belt Guard
106	710-0323		Truss Mach. Scr. 5/16-18 x .75" Lg.*
107	15835A		Pedal Bracket
108	714-0507		Cotter Pin 3/32" Dia. x .75"

Models 660 thru 689

PARTS LIST FOR FRONT ENGINE LAWN TRACTORS (CONTINUED)

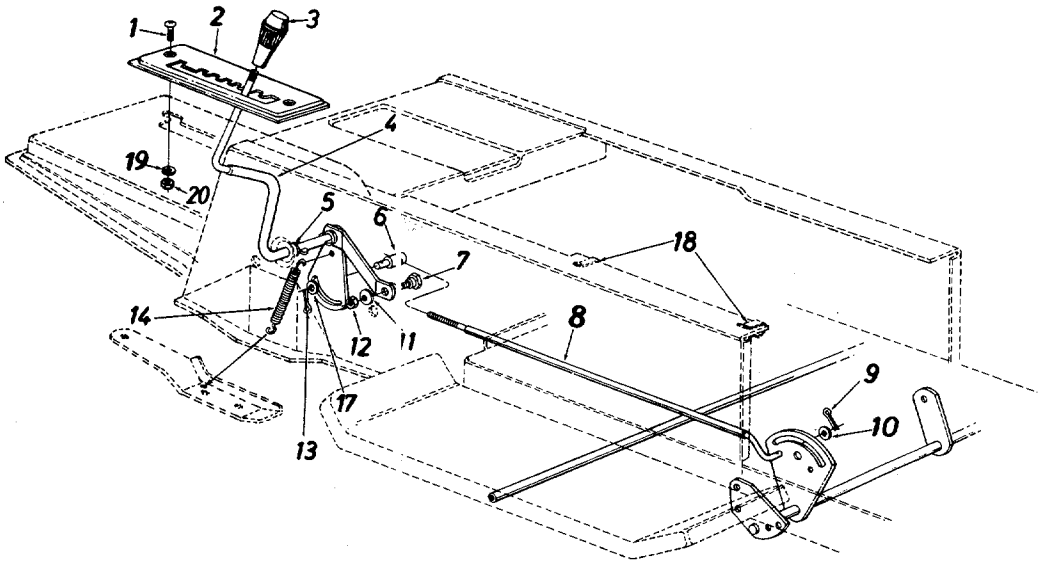
REF. NO.	PART NO.	CODE	DESCRIPTION	REF. NO.	PART NO.	CODE	DESCRIPTION
109	711-0198		Ferrule	117	727-0425		Spring Clip (Used w/Ref. No. 103)
110	710-0376		Hex Bolt 5/16-18 x 1.0" Lg.—(Gr. 5)	119	710-0427		Hex Bolt 3/8-16 x 1.25" Lg.
111	710-0195		Hex Bolt ¼-28 x .50" Lg.	120	756-0217		Fl-Idler w/Flanges 2.75" O.D.
112	736-0270		Bell-Wash. .265" I.D. x .75"	121	736-0280		Fl-Wash. .39" I.D. x 1.12" O.D.
113	17707	N	Shift Lever Link Ass'y.	122	712-0798		Hex Nut 3/8-16 Thd.
114	751-0474		Muffler (B&S 14.0 & 18 H.P. Eng.)	123	710-0258		Hex Bolt 1/4-20 x .62" Lg.
				124	16181		Spring Hanger Brkt.
	751-0469		Muffler (Van 14.0 H.P. Eng.)	127	750-0748		Spacer 5/16" I.D. (B&S Vanguard Only)
115	736-0140		Fl-Wash. .385" I.D. x .62"				
116	741-0404		Needle Brgs. (2 Req'd.)				

****REAR WHEEL CHART**

Description	18" x 9.50"	18" x 8.50"	18" x 6.50"	20" x 8.0"	20" x 10.0"
Wheel Ass'y. Comp.	734-0817	734-0601	734-0592	734-1675	734-1064
Tire Only	734-0448	734-0516	734-0294	734-1596	734-1065
Rim Only	734-0603	734-0603	734-0594	734-0603A	734-0603A

Note: If brand of tire is important, order by part number and description (description is printed on the sidewall of tire) [i.e. Armstrong Super Turf, Goodyear Softrac, Carlisle Turf Saver, etc.].

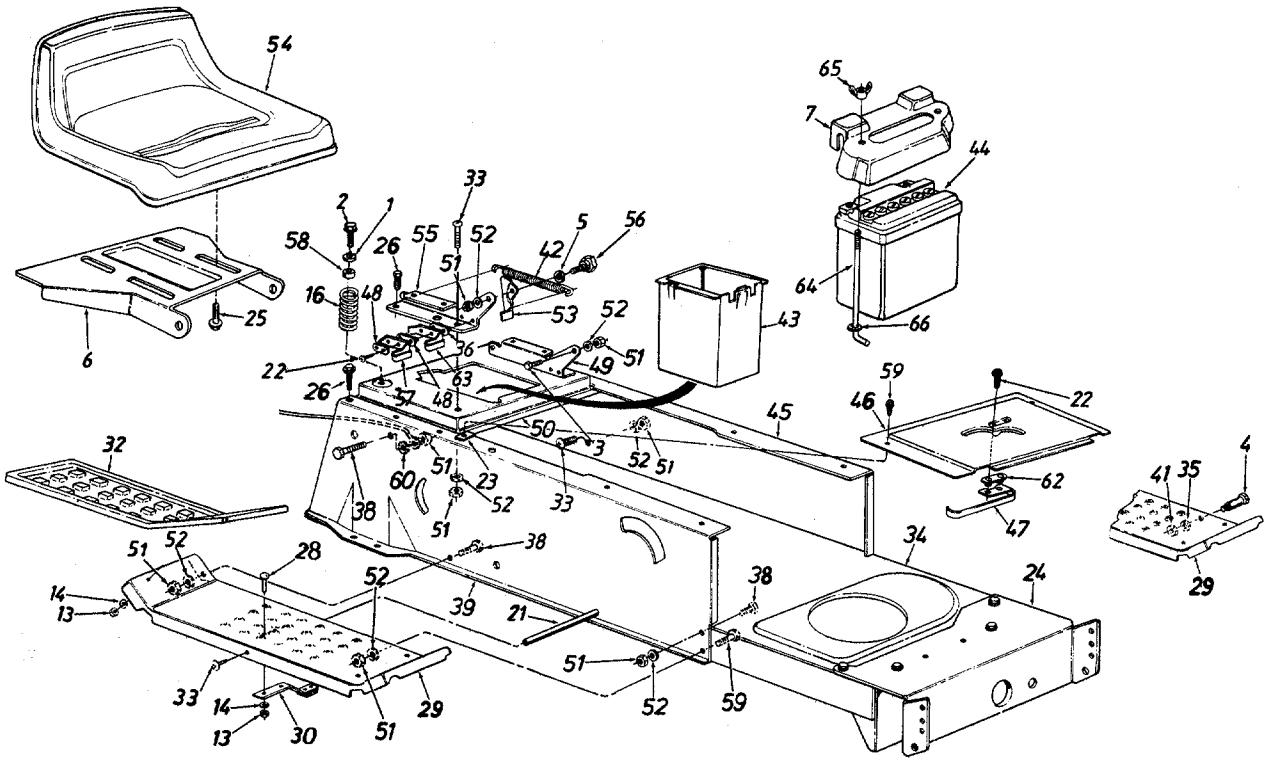
Models 660 thru 689



PARTS LIST FOR FRONT ENGINE LAWN TRACTORS

REF. NO.	PART NO.	CODE	DESCRIPTION	REF. NO.	PART NO.	CODE	DESCRIPTION
1	710-0924		Truss Mach. Scr. ¼-20 x .75" Lg.	10	736-0226		Fl-Wash. .469" I.D. x .88"
				11	736-0119		L-Wash. 5/16" I.D.*
2	16194		7-Speed Selector Plate	12	712-0267		Hex Nut 5/16-18 Thd.*
3	720-0218		Shift Knob	13	714-0507		Cotter Pin 3/32" Dia. x .75"*
4	16192A		Speed Selector Cam Ass'y.	14	732-0303		Spring .38" O.D. x 3.18" Lg.
5	736-0192		Flat Washer .53" I.D. x .93"	17	736-0140		Fl-Wash. .385" I.D. x .62"
6	711-0198		Ferrule 3/8-24 x .37" Dia.	18	726-0235		Speed Clip
7	738-0155		Shoulder Bolt	19	736-0329		L-Wash. ¼" I.D.*
8	747-0503A		Speed Control Link	20	712-0287		Hex Nut ¼-20 Thd.*
9	714-0507		Cotter Pin 3/32" Dia. x .75"*				

Models 660 thru 689

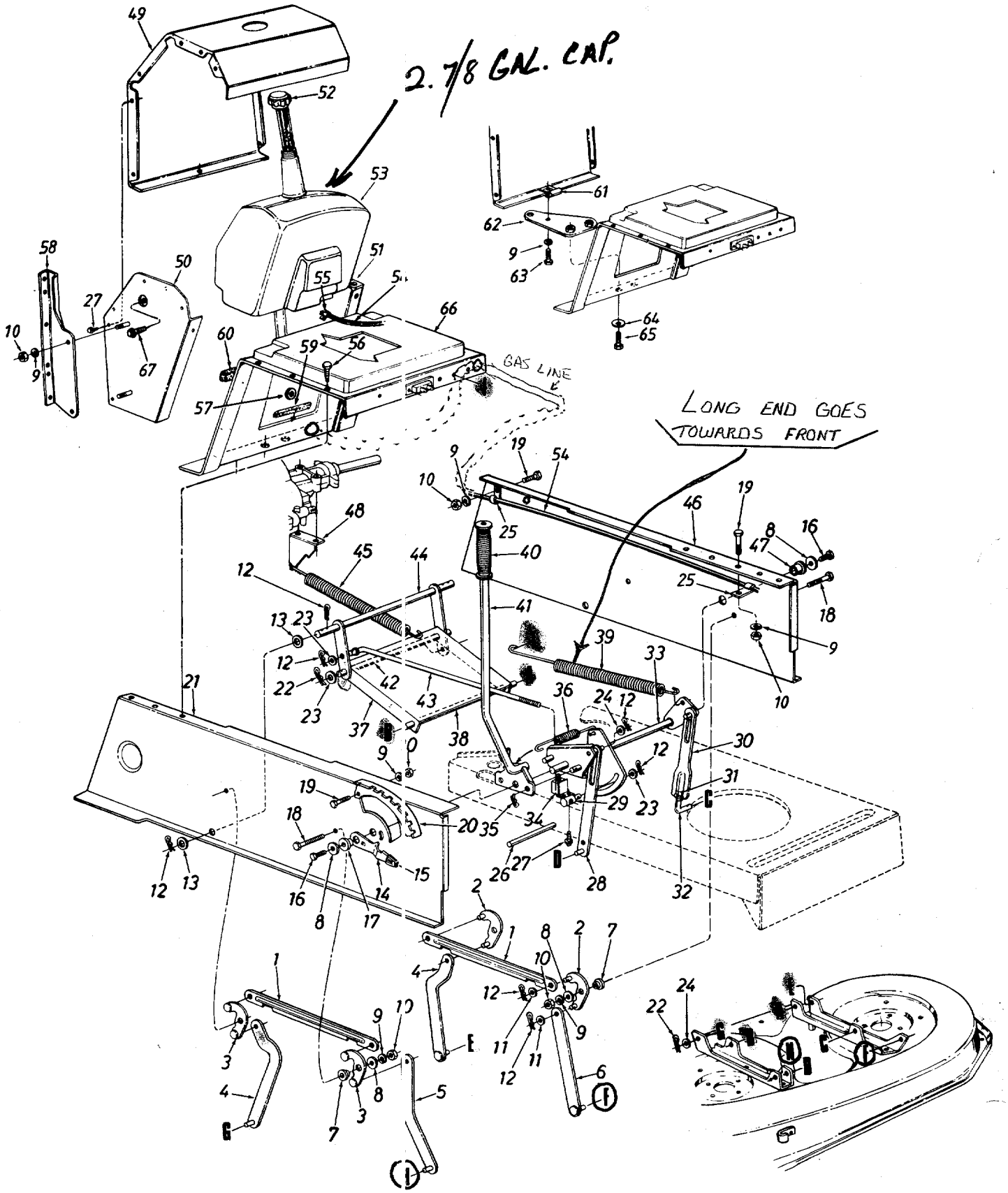


PARTS LIST FOR FRONT ENGINE LAWN TRACTORS

REF. NO.	PART NO.	CODE	DESCRIPTION	REF. NO.	PART NO.	CODE	DESCRIPTION
1	736-0159		Fl-Wash. .344" I.D. x .875"	36	726-0278	N	Insulator Boss Plate
2	710-0817		Hex Wash. Hd. Tap Scr. 5/16-18 x 1.25" Lg.	38	710-0118		Hex Bolt 5/16-18 x .75" Lg.*
				39	17622	N	Upper Frame—R.H.
3	738-0155		Shld. Bolt .437" Dia. x .162"	41	712-0798		Hex Nut 3/8-16 Thd.*
4	738-0145		Shld. Bolt .50" Dia. x .84"	42	732-0581		Extension Spring 5.31" Lg.
5	736-0141		Spr-Wash. .445" I.D. x .75	43	731-0873A		Utility Box
6	15607D		Seat Pivot Bracket	44	725-1430	N	Battery (275 Cold Crank Amps)
7	731-1132		Battery Cover	45	17623	N	Upper Frame—L.H.
13	712-0287		Hex Nut ¼-20 Thd.*	46	—		Shift Cover (Refer to Style Sheet)
14	736-0329		L-Wash. ¼" I.D.	47	725-0759		Reverse Safety Switch
16	732-0588		Compression Spring	48	726-0279	N	Insulator Plate
21	738-0526		Running Board Rod	49	17701	N	Seat Pivot Brkt. Support—L.H.
22	710-0227		Hex Wash. Hd. AB-Tap Scr. #8 x .50" Lg.	50	17226A	N	Hitch Plate
				51	712-0267		Hex Nut 5/16-18 Thd.*
23	726-0139		Speed Nut #10Z	52	736-0119		L-Wash. 5/16" I.D.*
24	17621	N	Front Pivot Brkt.	53	17239A		Seat Lift Brkt.
25	710-0623		Hex Tap Scr. 3/8-16 x .75"	54	757-0338		Seat 10-5/8" High
26	710-0726		Hex Wash. Hd. AB-Tap Scr. 5/16 x .75" Lg.	55	17702	N	Seat Pivot Brkt. Support—R.H.
				56	738-0296		Shld. Bolt .437" Dia. x .268"
28	710-0134		Carriage Bolt ¼-20 x .62"*	57	725-1303		Spring Switch
29	17770	N	Running Board (R.H. & L.H.)	58	722-0160		Bushing
30	761-0168		Blade Brake Ass'y.	59	710-0971		Truss Hd. Scr. 5/16-18 x 1.0" Lg.
32	731-0909		Rubber Foot Pad—L.H.**	60	736-0607		External L-Wash. 5/16" I.D.
	731-0910		Rubber Foot Pad—R.H.**	62	726-0222		Insulator Nut Plate
33	710-0323		Truss Mach. Scr. 5/16-18 x .75" Lg.*	63	725-1439	N	Safety Switch (Seat)
				64	711-0222		Battery Hold Down Rod
1	17620	N	Lower Frame	65	712-0113		Wing Nut Plastic ¼-20 Thd.
3	736-0169		L-Wash. 3/8" I.D.*	66	726-0271		Push Nut

**Optional Parts

Models 660 thru 689



Models 660 thru 689

PARTS LIST FOR FRONT ENGINE LAWN TRACTORS

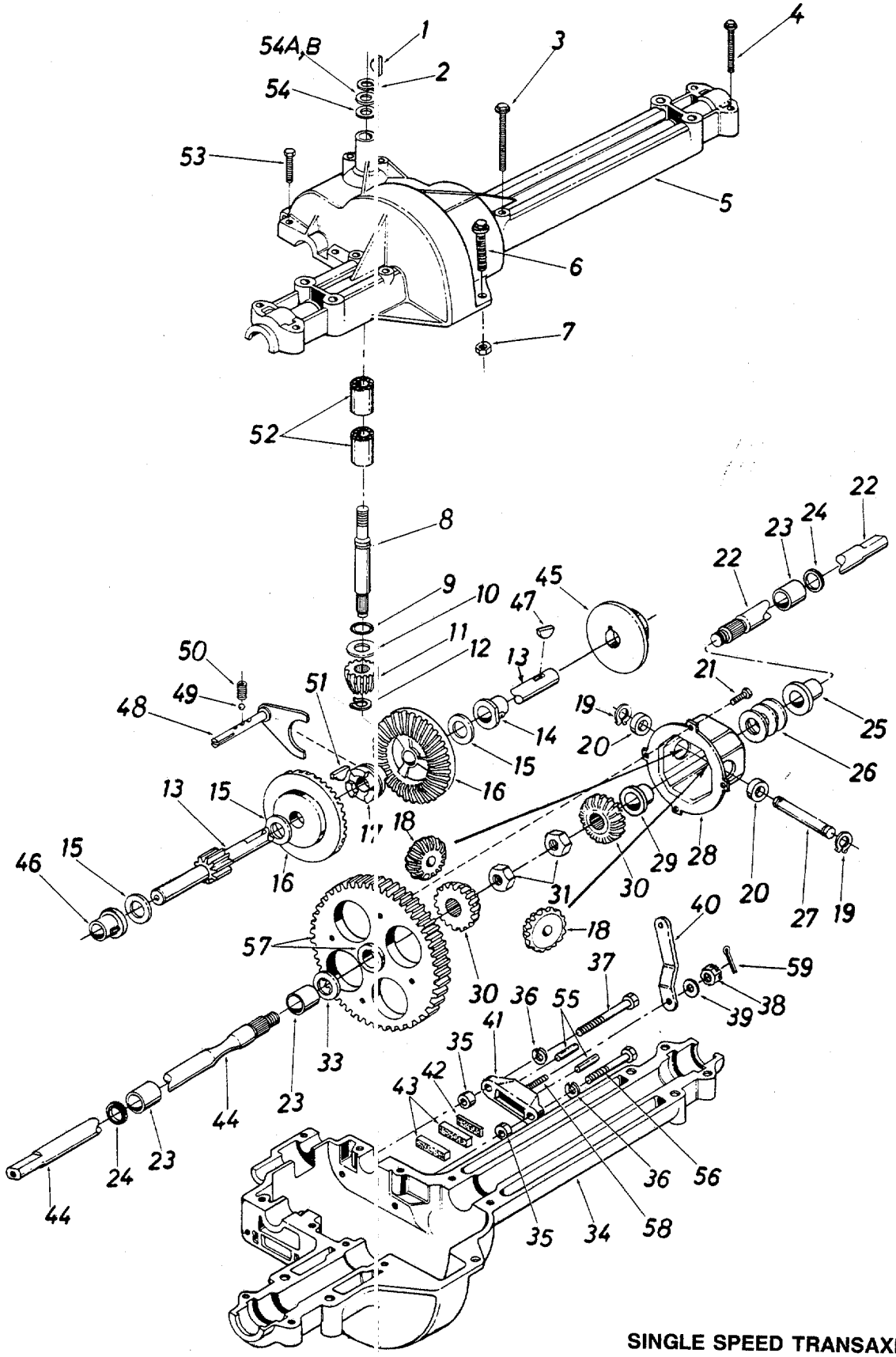
REF. NO.	PART NO.	CODE	DESCRIPTION
1	09735A		Connecting Rod
2	17640		Pivot Link Ass'y.—L.H.
3	17641		Pivot Link Ass'y.—R.H.
4	17710		Deck Hanger Link Ass'y.
5	14800		Deck Hanger Link Ass'y.
6	14804		Deck Hanger Link Ass'y.
7	748-0331		Shld. Spacer .318" I.D.
8	736-0231		Fl-Wash. .344" I.D. x 1.125"
9	736-0119		L-Wash. 5/16" I.D.*
10	712-0267		Hex Nut 5/16-18 Thd.*
11	736-0192		Fl-Wash. .531" I.D. x .94" O.D.
12	714-0144		Cotter Pin 1/8" Dia.
13	736-0256		Fl-Wash. .635" I.D. x 1.0" O.D.
14	732-0412A		Deck Lift—Down Stop (Incl. Ref. 15)
15	08540		Knob
16	710-0604		Hex Wash. TT-Tap Scr. 5/16-18 x .75" Lg.
17	748-0176		Flange Brg. .63" I.D.
18	710-0650		Hex Wash. TT-Tap Scr. 5/16-18 x .875" Lg.
19	710-0118		Hex Bolt 5/16-18 x .75" Lg.
20	17730		Index Brkt.
21	17622		Upper Frame—R.H.
22	714-0101		Inter. Cotter Pin ½" Dia.
23	736-0267		Fl-Wash. .385" I.D. x .87" O.D.
24	736-0160		Fl-Wash. .531" I.D. x .93" O.D.
25	726-0272		Clamp
26	738-0526		Running Board Rod
27	710-0351		Truss Mach. Scr. #10 x .5" Lg.
28	14802A		Link Deck Lift Ass'y.
29	711-0723A		Adj. Ferrule 3/8-24 Thd.
30	17712		Adj. Deck Lift Link
31	712	3066	Hex Jam Nut ½-20 Thd. (Gr. 5)
32	711-0841		Lift Link Adjuster
33	17637		Lift Shaft Ass'y.
34	725-0803B		Safety Switch (Deck)
35	714-0145		Inter. Cotter Pin 3/8" Dia.
36	732-0637		Extension Spring
37	17636		Stabilizer Bracket
38	738-0670		Shaft ½" Dia. x 10.28" Lg.
39	732-0638		Extension Spring
40	720-0233		Grip (Lift Handle)
41	17675		Deck Lift Handle Ass'y.
42	738-0669		Shaft 3/8" Dia. x 9.34" Lg.
43	747-0598		Disengagement Rod
44	17624		Stabilizer Shaft Ass'y.
45	732	0556	Extension Spring Lg. 7.58"
46	17623		Upper Frame—L.H.
47	741-0313		Flange Brg. .632" I.D.
48	17128		Spring Retainer Brkt.
49	16238		Gas Tank Housing
50	17082		Side Panel Ass'y.—R.H.
51	17083		Side Panel Ass'y.—L.H.
52	751-0226A		Gas Gauge
53	751-0530A		Gas Tank
54	751-0535-46		Fuel Line
55	726-0205		Hose Clamp
56	710-0726		Hex Wash. AB-Tap 5/16 x .75" Lg.
57	735-0112		Rubber Grommet (GAS LINE)
58	17078		Mtg. Brkt.—R.H. (Use w/Optional Grass Catcher)
	17077		Mtg. Brkt.—L.H. (Use w/Optional Grass Catcher)
59	731-0511-5		Trim Strip
60	722-0157		Foam Strip
61	726-0211		Speed Nut
62	17166		Hitch Bar Ass'y.
63	710-0376		Hex Bolt 5/16-18 x 1.0" Lg. (Gr. 5)
64	736-0105		Bell-Wash. .38" I.D. x .88"
65	710-0623		Hex Wash. Tap Scr. 3/8-16 x .75" Lg.
66	17226A		Hitch Plate
67	710-0653		Hex Wash. Hd. Tap Scr. ¼-20 x .38" Lg.

*For faster service obtain standard nuts, bolts and washers locally. If these items cannot be obtained locally, order by part number and size as shown on parts list.

NOTE: The engine is not under warranty by the mower manufacturer. . .If repairs or service is needed on the engine, please contact your nearest authorized engine service outlet. Check the "Yellow Pages" of your telephone book under "Engines—Gasoline."



Models 660 thru 689



SINGLE SPEED TRANSAXLE—R.H.
MODEL 717-0542

Models 660 thru 689

PARTS LIST FOR
SINGLE SPEED TRANSAXLE RIGHT HAND 717-0542

REF. NO.	PART NO.	CODE	DESCRIPTION
1	714-0129		#4 Hi-Pro Key 3/32 x 5/8" Dia.
2	716-0115		Snap Ring .625" Shaft
3	710-0854		Hex Bolt ¼-20 x 1.75" Lg.*
4	710-0809		Hex Bolt ¼-20 x 1.25" Lg.*
5	717-0540	N	Upper Housing
6	710-0642		Hex Fl-Bolt ¼-20 x .75" Lg.
7	712-0287		Hex Nut ¼-20 Thd.*
8	717-0634		Input Shaft
9	721-0178		Square Seal 5/8" I.D.
10	736-0335		Thrust Washer 5/8" I.D. x 1.25" O.D.
11	717-0633		Pinion Input 14T
12	716-0108		Retaining Ring 7/16" Ext.
13	717-0758		Drive Shaft—R.H.
14	741-0336		Flange Brg. 5/8" I.D. x ¾" Lg.*
15	**		Fl-Wash. (See Below)
16	717-0757		Bevel Gear 42T
17	717-0667		Clutch Collar
18	717-1020		Miter Gear 15T
19	716-0142		Snap Ring
20	717-0690		Thrust Bearing ½" I.D. x 1.0" O.D.
21	710-0862		Pan Head Scr. ¼-20 x .50" Lg. w/Patch
22	717-0537	N	Axle R.H.
23	741-0340		Sleeve Bearing ¾" I.D. x 1.0" Lg.
24	721-0179		Oil Seal ¾" I.D.
25	741-0339		Flange Bearing ¾" I.D. x 15/16" Lg.
26	736-0188		Fl-Wash. .760" I.D. x 1.49" O.D.
27	717-0673		Cross Shaft
28	717-0777		Differential Housing Ass'y.
29	—		Comes with Ref. 28
30	717-1019		Miter Gear
31	712-0200A		Hex Ins. L-Nut ½-20 Thd.
33	736-0351		Fl-Wash. .75" I.D. x 1.5" O.D.
34	717-0541	N	Lower Housing
35	750-0555		Spacer .53" O.D. x 3/8" Lg.
36	736-0329		L-Wash. ¼" I.D.*
37	710-0886		Hex Bolt ¼-20 x 1.50" Lg. (Grade 5)
38	712-0335		Castle Nut 5/16-24 Thd.*
39	736-0371		Fl-Wash. .34" I.D. x .875" O.D.
40	717-0700		Actuating Arm—R.H.
41	717-0679		Brake Yoke
42	717-0682		Puck Plate
43	717-0678		Brake Puck
44	717-0536	N	Axle L.H.
45	717-0677		Brake Disc
46	741-0337		Flange Bearing 5/8" I.D. x 15/16" Lg.
47	714-0161		Woodruff Key 3/16 x 5/8 HT
48	717-0754		Shift Fork Ass'y.
49	741-0862		Ball Detent .250" Dia.
50	732-0863		Spring Detent
51	714-0169		#9 Hi-Pro Key 3/16" x ¾" Dia. HT
52	741-0335		Needle Brg. 5/8" I.D. x ½" Lg.
53	710-0855		Hex Bolt ¼-20 x 1.00" Lg.
54	736-0336		Fl-Wash. 5/8" I.D. x .030
54A	736-0337		Fl-Wash. 5/8" I.D. x .040
54B	736-0349		Fl-Wash. 5/8" I.D. x .020
55	741-0343		Actuating Pin 5/16" Dia.
56	710-0886		Hex Bolt ¼-20 x 1.50" Lg. (Grade 5)
57	717-0767		Differential Gear 72T Ass'y. w/Bearing
58	717-0796		Sq. Hd. Bolt 5/16-24 Thd.
59	1544-013		Cotter Pin 3/32" Dia. x .50" Lg.
—	737-0148		Grease—Shell (10 oz.)

**Ref. No. 15 736-0349 Fl-Wash. 5/8" I.D. x 1.0" O.D. x .020 Thk.
736-0336 Fl-Wash. 5/8" I.D. x 1.0" O.D. x .030 Thk.
736-0337 Fl-Wash. 5/8" I.D. x 1.0" O.D. x .040 Thk.

PARTS INFORMATION

POWER EQUIPMENT PARTS AND SERVICE

Parts and service are available through the authorized service firms listed below. All orders should specify the model number of your unit, part numbers, description of parts and the quantity of each part required.

BRIGGS AND STRATTON, TECUMSEH AND PEERLESS PARTS AND SERVICE

Briggs & Stratton, Tecumseh and Peerless parts and service should be handled by your nearest authorized engine service firm. Check the yellow pages of your telephone directory under the listing **Engines—Gasoline,** Briggs & Stratton or Tecumseh Lauson.

NOTE: If any parts are found to be missing or defective upon assembly of this unit, write to advise the factory so that immediate replacement can be made.

ARKANSAS	**NORTH LITTLE ROCK**	
Sutton's Lawn Mower Shop	5301 Roundtop Drive Box 368, Rt. 4	72117
CALIFORNIA	**PORTERVILLE**	
Billious	75 North D Street	93257
COLORADO	**DENVER**	
Spitzer Industrial Products Co.	6601 N. Washington St.	80229
FLORIDA	**JACKSONVILLE**	
Radco Distributors	4909 Victor St. Box 5459	32207
	HIALEAH	
Small Eng. Dist.	7995 W. 26th Court	33016
ILLINOIS	**LYONS**	
Keen Edge Co.	8615 Ogden Ave.	60534
INDIANA	**ELKHART**	
Parts & Sales Inc.	2101 Industrial Pkwy. Box 277	46516
IOWA	**DUBUQUE**	
Power Lawn & Garden Equip.	2551 J.F. Kennedy	52001
MARYLAND	**BELTSVILLE**	
Center Supply Co.	6802 Industrial Dr. #208	20705
MASSACHUSETTS	**SPRINGFIELD**	
Morton B. Collins Co.	300 Birnie Ave.	01107
MICHIGAN	**MOUNT CLEMENS**	
Power Equipment Dist.	340 Hubbard	48043
MINNESOTA	**PLYMOUTH**	
Hance Distributing Inc.	12795 16th Ave. North	55441
MISSOURI	**EARTH CITY**	
Oscar Wilson Engine & Parts	4159 Shoreline Dr.	63045
	KANSAS CITY	
Automotive Equip. Service	3117 Holmes St.	64109
NEW YORK	**CARTHAGE**	
Gamble Dist., Inc.	West End Ave. Box 389	13619
NORTH CAROLINA	**BROWNS SUMMIT**	
Dixie Sales Company	5920 Summit Ave.	27214
OHIO	**CARROLL**	
Stebe's Mid-State Mower Supply	Box 366, 71 High St.	43112
	CLEVELAND	
Bleckrie, Inc.	7900 Lorain Ave.	44102
	WADSWORTH	
National Central	687 Seville Rd.	44281
	YOUNGSTOWN	
Burton Supply Co.	1301 Logan Ave. Box 929	44501
PENNSYLVANIA	**HARRISBURG**	
EECO Inc.	4021 N. 6th St.	17110
	PITTSBURGH	
Bluemont Co.	11101 Frankstown Rd.	15235
	PUNXSUTAWNEY	
Frank Roberts & Sons	R.D. 2	15767
	SCRANTON	
Scranton Auto Ignition Co.	1133-35 Wyoming Ave.	18509
TENNESSEE	**KNOXVILLE**	
Ace Distributors	2103 Magnolia	37917
	NASHVILLE	
Chilton Air Cooled Engine	319 4th Ave. S.	37210
TEXAS	**DALLAS**	
Marr Brothers, Inc.	423 E. Jefferson	7520[illegible]
UTAH	**SALT LAKE CITY**	
Powered Products	1661 N. Beck St.	84116
VIRGINIA	**ASHLAND**	
RBI Corp.	101 Cedar Ridge Dr.	23005
WASHINGTON	**SEATTLE**	
Equip. Northwest	1410 14th Ave.	98122
WISCONSIN	**MILWAUKEE**	
Wisconsin Magneto Inc.	4727 N. Teutonia St.	53209
PUERTO RICO	**RAMEY**	
Island Distribution Center	102 N. St.	00604

WARRANTY PARTS AND SERVICE POLICY (0689)

The purpose of warranty is to protect the customer from defects in workmanship and materials, defects which are NOT detected at the time of manufacture. It does not provide for the unlimited and unrestricted replacement of parts. Use and maintenance are the responsibility of the customer. The manufacturer cannot assume responsibility for conditions over which it has no control. Simply put, if it's the manufacturer's fault, it's the manufacturer's responsibility; if it's the customer's fault, it's the customer's responsibility.

CLAIMS AGAINST THE MANUFACTURER'S WARRANTY INCLUDES:

1. **Replacement of Missing Parts** on new equipment.
2. **Replacement of Defective Parts** within the warranty period.
3. **Repair of Defects** within the warranty period.

All claims MUST be substantiated with the following information:

1. **Model Number, Serial Number and/or Date Code** of unit involved.
2. **Date** unit was purchased.
3. **Date of Failure.**
4. **Nature of Failure.**

MTD PRODUCTS INC • P.O. BOX 360900 • CLEVELAND, OHIO 44136